

AIR POLLUTION EMISSION TEST

GASOLINE TRANSFER

(PLANT NAME)

VAPOR RECOVERY SYSTEMS

SAN DIEGO COUNTY

(PLANT ADDRESS)

CALIFORNIA



U. S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Water Programs
Office of Air Quality Planning and Standards
Emission Standards and Engineering Division
Emission Measurement Branch
Research Triangle Park, N. C. 27711

TEST EVALUATION
OF
GASOLINE TRANSFER
VAPOR RECOVERY SYSTEMS

D.E. Hasselmann
TRW, Inc.
Transportation and Environmental Operations
One Space Park, Redondo Beach, California 90278

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1.0 INTRODUCTION

This report describes the results from tests of systems for collecting hydrocarbon vapors at automobile filling stations. These tests were conducted by TRW Environmental Services under sponsorship from EPA with support from San Diego County. The purpose of these tests was to develop test procedures for determining gasoline vapor emissions during transfer operations at service stations and to use these methods to evaluate five different vapor recovery systems.

Two balanced and three secondary vapor recovery systems were tested. The balanced systems were designed to return the vapors via simple piping to the underground tank. Pressure differentials created by liquid displacement from the underground tank into the vehicle tank provided the driving forces. The two balance systems differed in that one configuration had separate manifolds for each grade of product while the other system had all three product grades manifolded together.

The secondary systems had vacuum blowers for collecting the vapors from the vehicle tank with subsequent processing of the excess vapors. Processing by the secondary units tested was done by incineration or refrigeration/condensation.

The location of these systems in San Diego, California is shown in Table 1-1

SYSTEM	LOCATION
Enviro-nics, Inc. Vapox 3000 (Incineration)	Texaco Station Baltimore & Fletcher Parkway
Intermark Industries, Inc. Mark I (Compression-Refrigeration)	Chevron Station Interstate "5" & Carmel Valley Rd.
Process Products, Inc. Vapor Savor 200 (Refrigeration-Carbon Adsorption)	Tibbs Union Waring and Zion Road
Gulf Oil Balanced (Multi-Product Manifold)	Gulf Station University & Boundary
Standard Oil Balanced (Single-Product Manifold)	Chevron Station Baltimore & Lake Murray Blvd.

Table 1-1 System Locations

The measurements which were taken at these stations consisted primarily of hydrocarbon concentration and volumes. The concentrations were measured as total hydrocarbons by a flame ionization detector. The volumes were measured by dry gas meters along with temperature and pressure measurements for standardization purposes. These measurements were made in the return vapor line from the fill nozzle, at the inlet and outlet of the secondary system processing units, and at the underground tank vents of the balanced systems.

Over 400 cars were tested during a three-week period from 6 to 26 June, 1974. The team performing the tests consisted of the following members:

P. Westlin, EPA Project Officer
D. Hasselmann, TRW Project Manager
T. Eggleston, TRW Project Engineer
T. Hurst, TRW
J. McReynolds, TRW
W. Davis, TRW
R. Redmond, TRW
D. Savia, TRW

2.0 SUMMARY AND DISCUSSION OF RESULTS

2.1 TEST SEQUENCE

The sequence of tests and the number of vehicles tested each day are shown in Table 2-1.

DATE	SYSTEM	TEST	# OF VEHICLES
6/6	Intermark	Vehicle Refueling	51
6/7	Intermark	Bulk Drop & Process Unit	-
6/10	(STATION DELAY)	-	-
6/11	Process Products	Vehicle Refueling	25
6/12	Gulf Balanced	Bulk Drop & Vehicle Refueling	30
6/13	Gulf Balanced	Vehicle Refueling	62
6/14	Gulf Balanced	Vehicle Refueling	75
6/17	Standard Balanced	Vehicle Refueling	29
6/18	Standard Balanced	Bulk Drop & Vehicle Refueling	18
6/19	Standard Balanced	Vehicle Refueling	35
6/20	Envionics	Vehicle Refueling	54
6/21	Envionics	Bulk Drop & Processing Unit	-
6/24	Process Products	Vehicle Refueling	21
6/25	Process Products	Processing Unit	-
6/26	Intermark	Processing Unit	-

Table 2-1. Test Sequence

2.2 STATION DATA

The daily station data is shown in Appendix A. The parameters which were recorded for each station were the morning, noon, and evening weather conditions; the underground tank volumes and temperatures at the beginning and end of each day; and the amount of fuel dispensed at each of the islands.

It should be noted that the volume of liquid dispensed at the island may be different from the reading for the liquid taken out of the underground tank. In all cases, the accurate measurement is that noted for the dispensers. The underground tank volume was measured by a dip stick inserted through the fill tube. If there was any pressure in the underground tank, as was the case for some of the secondary recovery systems, the underground tank reading was in error. This was due to the fact that the liquid level in the fill tube was displaced proportional to the underground tank pressure.

The general weather conditions for the test period were fair and sunny with daytime temperatures in the mid-80's. Evening temperatures dropped to the low 70's.

2.3 BULK DROP DATA

The bulk terminal for the Standard Station was located on Harbor Drive near the Coronado Bridge in downtown San Diego. The bulk facilities for Union 76, Texaco, and Gulf were all located at Mission Valley near the Sports Coliseum. The truck loading was generally performed in the morning, and travel times from the bulk terminal to the station under test were approximately one-half to three-quarters of an hour. This resulted in bulk drops at the station before noontime.

Data for each of the bulk drops is provided in the data sheets of Appendix B. The filling of the tank trucks was observed at the bulk terminals. The volume loaded into the tank truck was obtained from the certified meter at the bulk station. Temperature readings were obtained from the dial thermometers located in each of the product lines. Temperatures of the product being loaded into the truck generally were around 72°F., and nominal loading rates were 600 gpm. RVP samples, for the product being tested at the stations, were obtained by taking a sample through a tap on the product lines at the bulk terminal.

The dome hatches on the tank trucks were monitored during bulk loading by an explosimeter. The domes were generally tight; although, there was an occasional leak as indicated on the data sheets. These leaks were generally minor and consisted of occasional puffs on the sniffer.

2.3.1 Environics System

During the drop at the Texaco Station, a slight leak was observed at the liquid fill to underground tank connection. This leak was not sufficient to cause a flow of liquid but it did cause a reading on the explosimeter. A slight leak was also observed at the vapor return line from the underground tank causing an explosimeter reading around 0.6 L.E.L.

Both regular as well as premium gasoline were dropped at the same time.

2.3.2 Intermark System

The bulk drop at the Standard Station was made by dropping both premium and regular gasoline at the same time. This station is temporarily restricted by the APCD to single product drops because of the processing unit; however, it was decided to drop both grades simultaneously for this test in order to simulate normal operating conditions.

During loading of the truck at the bulk terminal it was noted that there was a slight leak at the number 2 tank of the truck and number 1 and number 3 tanks of the trailer.

The pressure at the tank truck during bulk drop rose to 14.5 inches of water at the start and then decreased to 11.5 inches of water at the end of drop. The hookup lines were retained in place for approximately five minutes at which time the tank pressure had dropped to 2.5 inches of water. This was the same pressure as at the processing unit inlet line.

A few drops of fuel spilled during disconnecting of the liquid line. This was difficult to avoid since the truck driver was required to lift the product hoses above his head in order to drain out liquid remaining in the lines.

2.3.3 Process Products System

The OPW vent was noted to be leaking on the day prior to the bulk drop. A new valve was installed; however, it too had a small leak despite cleaning of the diaphragm faces. A quantitative measurement could not be made; however, a plastic bag fitted over the vent indicated a leak rate between

one-half to one cubic foot per hour.

The tank truck drop was made by simultaneous drop of the regular and the premium gasoline. A leak was observed on the hose fitting at the underground tank adaptor on the regular grade dispensing line. This leak caused air bubbles in the liquid which could be observed through the sight glass.

The premium product was loaded on the tank truck in San Diego. The regular grade, however, was loaded in Los Angeles and had come down the previous morning. The Union storage facilities were out of regular grade gasoline and Union indicated they had been given approval to ship regular grade gasoline from Los Angeles to fulfill the needs of the test program. As a result it was not possible to take an RVP sample during loading, and a sample was taken from the submerged fill tube after the product was delivered.

The pressure in the test tank truck averaged around 3-4 inches of water during the drop. At the end of the drop, the pressure remained at 1.5 inches of water in the underground lines and in the tank truck.

During removal of the liquid dispensing line from the underground fitting to the tank a significant spill of liquid occurred. The quantity of liquid spilled was sufficient to fill up the manhole at the underground fitting.

2.3.4 Gulf Balanced System

Vents on the underground tank were manifolded together to a common outlet. A Christmas tree arrangement, as shown in Figure 2.1, was placed on this common outlet to allow inbreathing through one port and outbreathing through another port. These ports were opened and closed by 3/4" diameter solenoid valves. These solenoid valves were in turn activated by pressure/vacuum switches. The switches are actuated at a pressure (or vacuum) of approximately 0.25 in. H₂O and close when the pressure (or vacuum) has dropped to approximately 0.15 in. H₂O. Thus there is a dead band between the closing of one switch and the opening of the other switch. The outbreathing vent was connected to a long collapsed polyethylene bag during bulk drip and a carbon canister during overnight periods.

The bag was used instead of a dry gas meter during bulk drop in order to reduce back pressure on the vent lines. The inlet to the bag was monitored by a flame-ionization detector for total hydrocarbon concentrations.

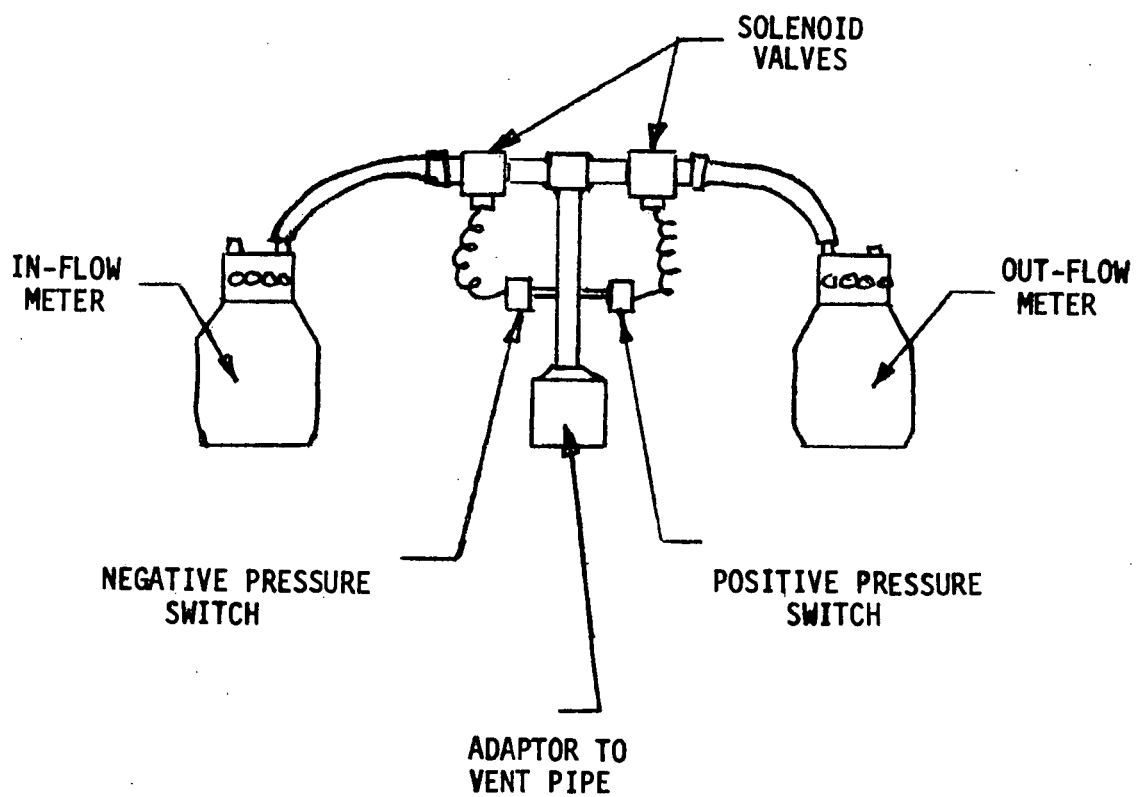


Figure 2.1 DIRECTIONAL FLOW VALVE
CHRISTMAS TREE

A slight leak was noted in the bag just prior to the bulk drop. This was caused by chafing upon the rock roof of the station. The leak was patched prior to the bulk drop and verified to have been sealed at the end of the bulk drop.

During the bulk drop a slight leak was noted on the explosimeter at the two dome covers of the truck. No leaks were noted on the domes of the trailer.

Vehicle refueling was discontinued during the bulk drop and the islands remained shut down for an hour and one-half after the bulk drop. The nozzles at the islands were not bagged with polyethylene bags; however, all nozzles were checked with an explosimeter during bulk drop, and while the underground tanks were venting into the collection bag. No movement of the explosimeter was noted during this check of each nozzle.

The underground tanks vented during the drop. As soon as the drop was completed, the underground tanks started to breathe in. This inbreathing occurred during the hour and one-half station shutdown and continued throughout the afternoon. No outbreathing was noted during the afternoon following the drop period. This suggested that vapor absorption was occurring in the underground tank since the temperature differential was small between the gasoline dropped and the gasoline already in the underground tank.

At the end of the next day a carbon canister was placed on the outlet and monitored for the next two and one-half days. No change in carbon canister weight was noted so that no hydrocarbon vapors appeared to have escaped.

2.3.5 Standard Balanced System

The bulk drop at the Standard Station was monitored by the same Christmas tree arrangement mentioned above. A polyethylene bag was used to capture outflow during bulk drop. Dry gas meters were then connected to the inbreathing and outbreathing solenoid valves to continue flow measurement after the drop. The addition of the dry gas meter to the inbreathing line was done to measure the effects noted at the Gulf Station.

The activated carbon canister was placed on the outbreathing solenoid valve line during the overnight periods. No change in canister weight was noted, and no hydrocarbon vapors appear to have been emitted.

2.3.6 Performance Efficiencies

The summary of all the bulk drops is shown in Table 2-2. The secondary systems all had volume capture efficiencies greater than 99%. Two of the systems had a positive pressure in the underground lines which was transferred to the tank truck.

BULK DROP DATA

	Drop (gal)	Volume (ft ³)	Vented (ft ³)	Volume Efficiency (%)	Mass Emission (gm)	Unit Mass (gm/gal)	Final Pressure (in.H ₂ O)
Secondary							
Envionics	7800	1043	10.14	99+	14.45	.002	0
Intermark	8685	1161	6	99+	28.5	.003	2.5
Process Products	8800	1180	0*	100	0	0	1.5
Balanced							
Gulf	8250	1103	26.3	97.6	260	.03	0
Standard	4665**	632.7	23.8	96.2	183	.04	0

- * The underground piping at this station had a leak which was discovered during subsequent tests. Venting may occur after the leak is repaired.
- ** Standard Balanced represents a normal drop of approximately 4000 gallons into each underground tank. Only the tested tank is indicated because the Standard Station uses separate vapor lines for each grade of product. Other stations use a manifold connecting the underground tanks.

Table 2-2. Bulk Drop Data

The balanced systems vented slightly during the bulk drop, but maintained a capture efficiency greater than 96%.

The dry gas meters recorded a 23.8 cu.ft. outflow of vapors for a 4665 gallon drop, and a subsequent inflow of 2.53 cu. ft. of air over 6 hours after the drop.

2.4 VEHICLE REFUELING DATA

The data collected for each car during vehicle refueling is provided in Appendix C. This data lists all of the reported and measured parameters for each vehicle during the test program. The data for each car is shown on four separate pages. The first two pages, Appendix C1, Appendix C2, show the data recorded and measured during the test program. The third page, Appendix C3, shows the performance calculations from the collected data. The fourth page, Appendix C4, shows the vapor collection ratios for each car compared to the "baseline" curve.

The amount of vapor volume returned per volume of liquid dispensed (grams per gallon) and the volume of vapor returned per volume of liquid dispensed (cubic feet per cubic feet) is shown in Table 2-3. In order to relate these values to the vapors escaping when there is no vapor recovery, it was necessary to develop a "baseline" vehicle curve. A "baseline" vehicle was to represent the vapors emitted during vehicle refueling if no control devices were applied.

2.4.1 Baseline Vehicles

Previous tests have shown that a relationship can be established between the liquid temperature differential and the returned vapor volume ratio. The liquid temperature differential is the vehicle tank temperature minus the dispensed liquid temperature. This temperature difference affects the amount of the vapor in the empty vehicle tank which expands or contracts prior to its emission from the tank.

To establish the "baseline" values for the test program, cars were tested at both of the balanced stations. A "baseline" car was measured by requiring the following three conditions:

- . Blocking tank vent line with a pressure gauge
- . Zero explosimeter reading during fill
- . No leaks in vehicle tank during check after fill

System	Vapor Mass To Liquid Volume (Gm /Gal)	Vapor Volume To Liquid Volume (Ft ³ /Ft ³)
Environics	4.97	4.61
Intermark	9.89	2.40
Process Products	3.31	1.20
	4.52	1.40
	Avg. 3.91	1.30
Gulf	2.43	.57
	2.48	.56
	2.02	.43
	Avg. 2.31	.52
Standard	2.92	.63
	3.05	.74
	2.39	.59
	Avg. 2.78	.65

Table 2-3 Vapor Return Ratio

The vehicle tank vent could be blocked satisfactorily only on post-1970 cars. This was done by disconnecting the carbon canister from the tank vent line under the hood of the car and attaching a manometer. A force fit was then established at the nozzle/gas tank interface, and a zero explosimeter had to be maintained throughout the filling at this interface. Upon completion of the fill, the vehicle tank was checked by pressurizing it with dry nitrogen to three inches of water. This pressure had to be maintained with a dry nitrogen flow of less than 10 ml/minute.

These baseline data were obtained only at the balanced stations where they could not be influenced by any vacuum assisted devices. The vehicles which met all three criteria were then used to determine a baseline curve. Six cars at the Gulf Station and eight cars at the Standard Station met all of these criteria and are listed in Table 2-4. Additional cars were tested, but were rejected during data analysis because they had slight explosimeter readings, did not have the canister line blocked, or failed to have some other data measured.

The results of these fourteen cars and the best fit curves are shown in Figures 2.2 and 2.3. The coefficient of regression for these curves is good. For the volume ratio, the regression coefficient was 87%, while for the mass ratio it was 63%. The curve fit for the mass return was slightly poorer because it depended upon measurement of volume as well as concentration, while the volume ratio only depended upon a single measurement. The baseline curves shown in Figure 2.2 and 2.3 were then used to calculate the relative performance of each vehicle in Appendix C4. The temperature differential for each car was used to obtain its baseline value, and then the performance of the car was compared to this baseline value.

2.4.2 Environics System

The Environics system used a modified OPW-7 nozzle with a sleeve extending partially into the automobile tank. As a result of this modification, it did not hang firmly onto the vehicle fillneck. On one occasion the nozzle was seen to have been pushed out of the vehicle tank by spitback. The nozzle did not shut off and several pints of gasoline were sprayed on to the station floor before the nozzle could be shut off.

License No.	Date	Station
205 JRT	6/12	Gulf
236 KLM	6/12	Gulf
105 HDT	6/13	Gulf
603 GBY	6/14	Gulf
312 HPO	6/14	Gulf
680 GOC	6/14	Gulf
918 KKL	6/17	Standard
932 HWN	6/17	Standard
XXX	6/17	Standard
574 KMK	6/17	Standard
545 HTC	6/19	Standard
405 JYC	6/19	Standard
603 GBY	6/19	Standard
438 JUA	6/19	Standard

Table 2-4 Baseline Vehicles

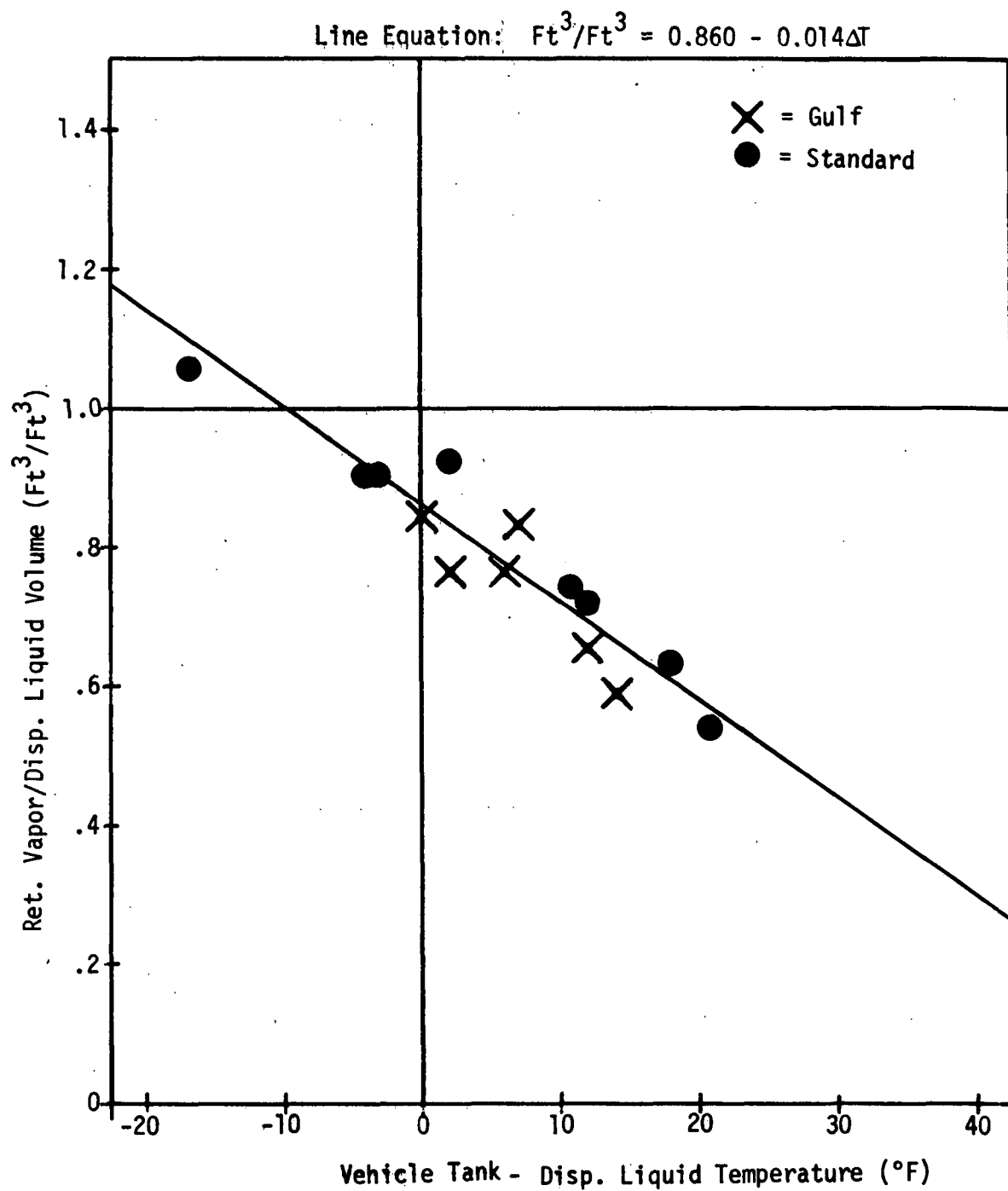


Figure 2.2 Baseline Vehicle Data

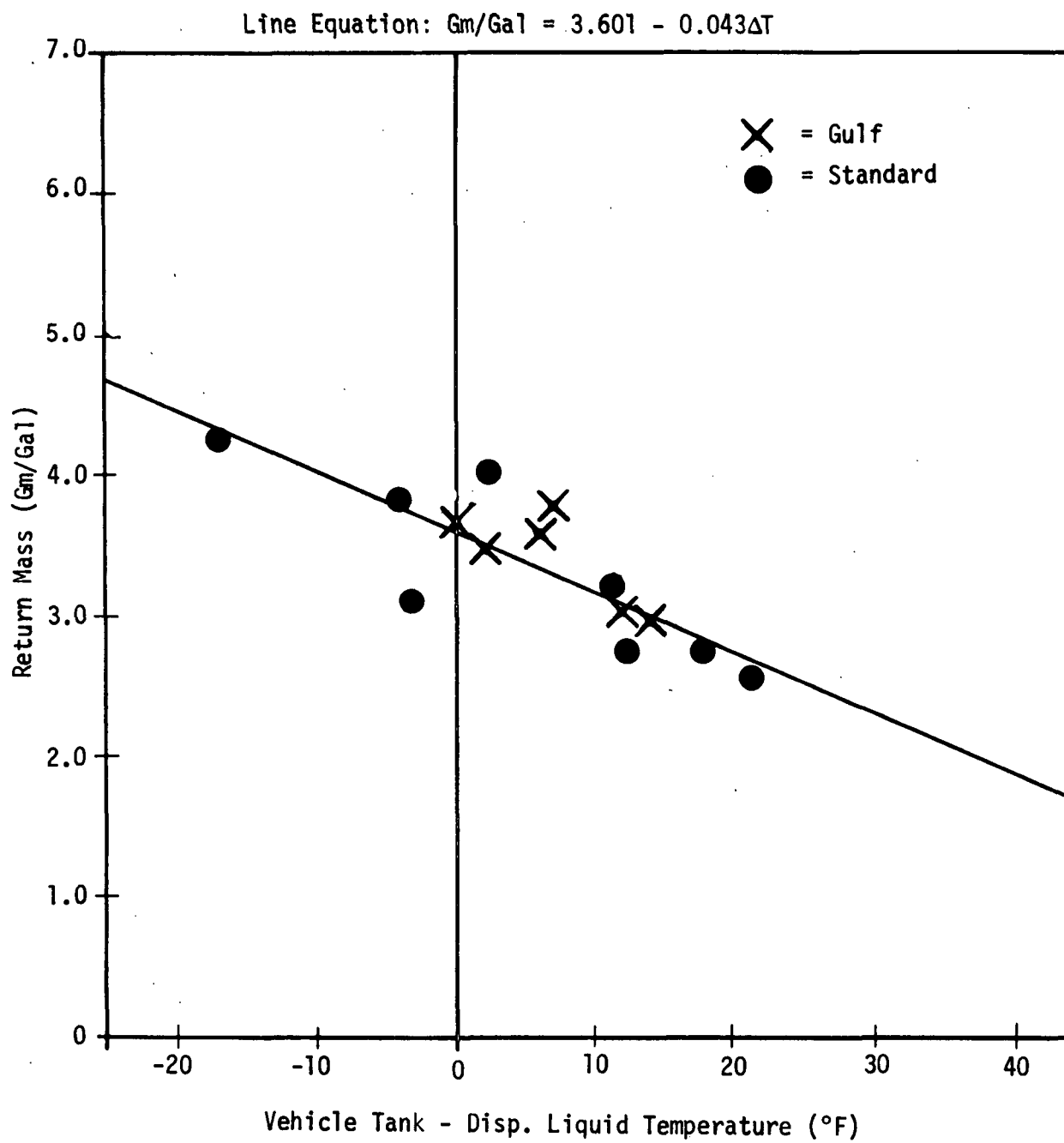


Figure 2.3 Baseline Vehicle Data

The vacuum at the nozzle ranged from 20 to 25 inches of water, and was the highest vacuum noted of all the vacuum assisted systems. The nozzle did not provide a tight fit with the fillneck so that excess air quantities probably were ingested through the gap.

The vacuum was started whenever one of the pumps at an island was turned on. Thus, air was drawn through the vapor return line after the dispensing of liquid had stopped. The data for the returned vapor in the calculations of Appendix C3 have been modified to account for this condition. The return vapor shown in Appendix C3 were the vapors returned only during dispensing of liquid. The readings on the hydrocarbon analyzer indicated that high vapor concentrations only occurred while liquid was being dispensed. As soon as dispensing was stopped, the hydrocarbon concentration dropped nearly to zero.

Due to the high vacuum, the unit returned a significant amount of volume. Since excess air could be ingested around the nozzle to vehicle tank interface, the actual concentration of hydrocarbons was not as high as would have been for a tight fit.

2.4.3 Intermark System

The Intermark nozzle was a modified OPW nozzle with a rubber boot and a magnetic seal at the vehicle tank interface. The return vapor line was actuated by a mechanical valve attached to the nozzle. The vacuum measured at the nozzle ranged from 10 to 15 inches of water. This value was found to be quite representative of the remaining nozzles at the station. The vapor mass drawn back by this system was quite high due to the tight fit between the rubber boot and the vehicle tank. Only slight amounts of air could be ingested from the outside.

2.4.4 Process Products System

The Process Products nozzle was a modified OPW nozzle with a sleeve extending into the vehicle tank. In addition, a rubber boot was provided to enclose the gap between the nozzle handle and the vehicle tank. This boot was not connected to the vapor return line, but acted simply to catch any spitback. The spitback was supposed to drain back into the vehicle tank; however, a slight amount of liquid remained entrapped in the rubber boot. This was indicated with the explosimeter after the nozzle was removed from the tank.

2.4.5 Gulf Balanced System

The data for each vehicle during the testing are shown in Figures 2.4 through 2.6. The data show some scatter below the baseline curve. A large number of vehicles show a zero return vapor volume on 6/14. These appear to have been caused by liquid entrainment in the vapor return line. Early in the afternoon it was noted that liquid was starting to collect in the glass traps ahead of the dry gas meter. Upon raising the hoses to drain the liquid into the glass traps, it was determined that 40 to 50 cc. of liquid had collected at the dispenser on both islands being tested. The liquid traps were drained before the tests were continued. Prior to this occurrence no liquid was observed to be entrained at the Gulf Station vapor return line.

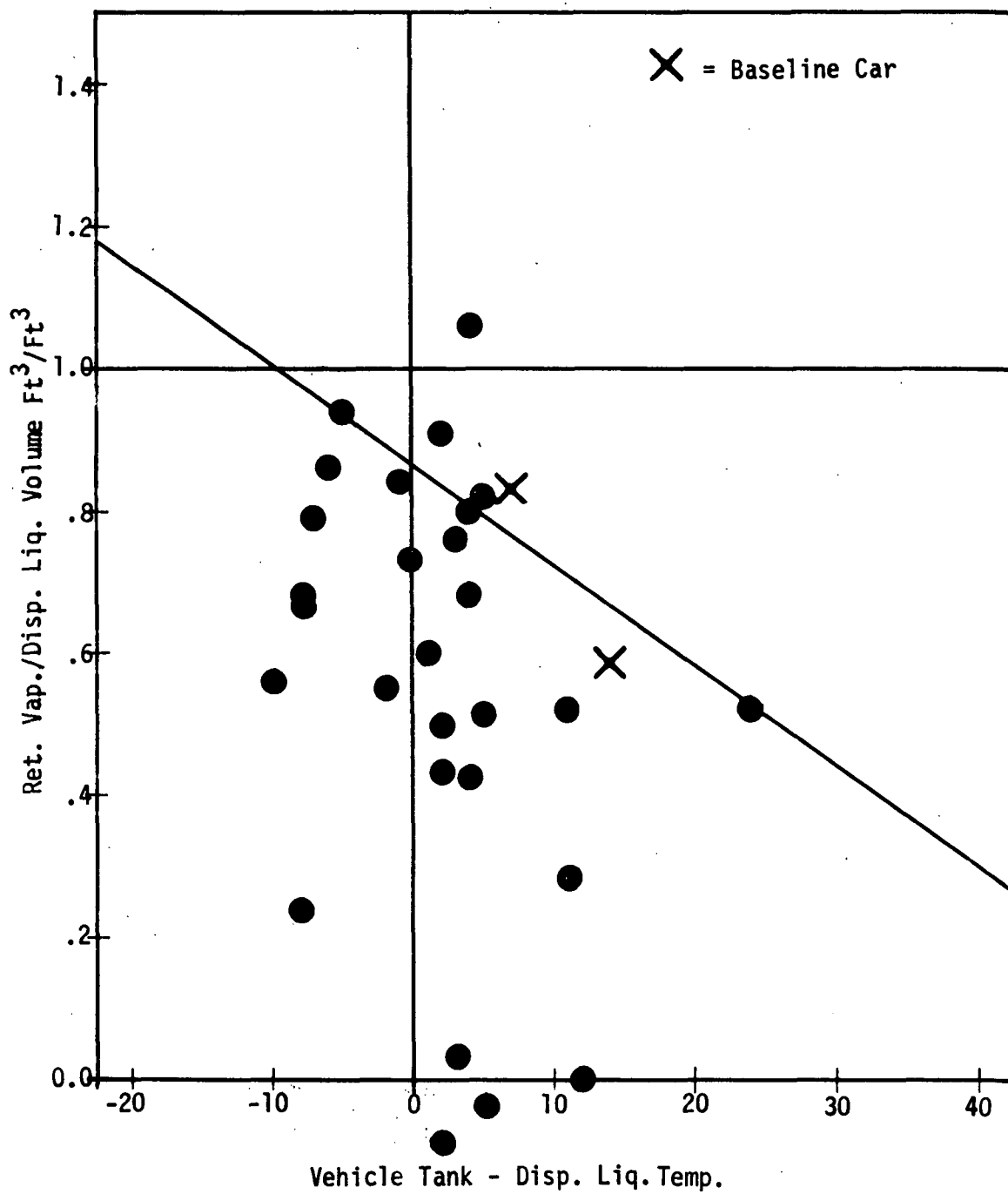
The vehicles with the zero return vapor volume are included in the efficiency data presented for the Gulf Station. The glass traps were capable of collecting several quarts of liquid prior to being filled. A contributory cause to liquid in the lines may have been the slight rise in the return hose prior to entering the glass trap. Every effort was made to prevent the formation of a loop which could trap liquid; however, it was not possible to eliminate it always.

Several cars indicated high volume return ratios. These cars are shown in Table 2-5. As noted in the table, it appears likely that some of these values are the result of incorrect meter readings.

2.4.6 Standard Balanced System

The volume return ratio for each day of testing at the Standard Station is shown in Figures 2.7 through 2.9. The data for 6/18 are of interest. During this day testing was set up for bulk drop measurement and measurement at only one dispenser. The same test personnel operated the instrumentation at the dispenser, and the same filling station operator was used during most of the day. It should be noted that the station attendants were inexperienced with the new OPW-7VN nozzle. Standard, therefore, brought in an operator experienced in using the nozzle. While both the experienced and inexperienced operators filled on all days, the experienced operator appears to have filled most of the cars on 6/18. He used as many or more hands-off fillings on 6/18 as for the other two days. It appears that he may have been more careful in inserting the nozzle. Excluding three cars, the data closely match the baseline curve.

The remainder of the data show the same general pattern as for the Gulf Balance System.



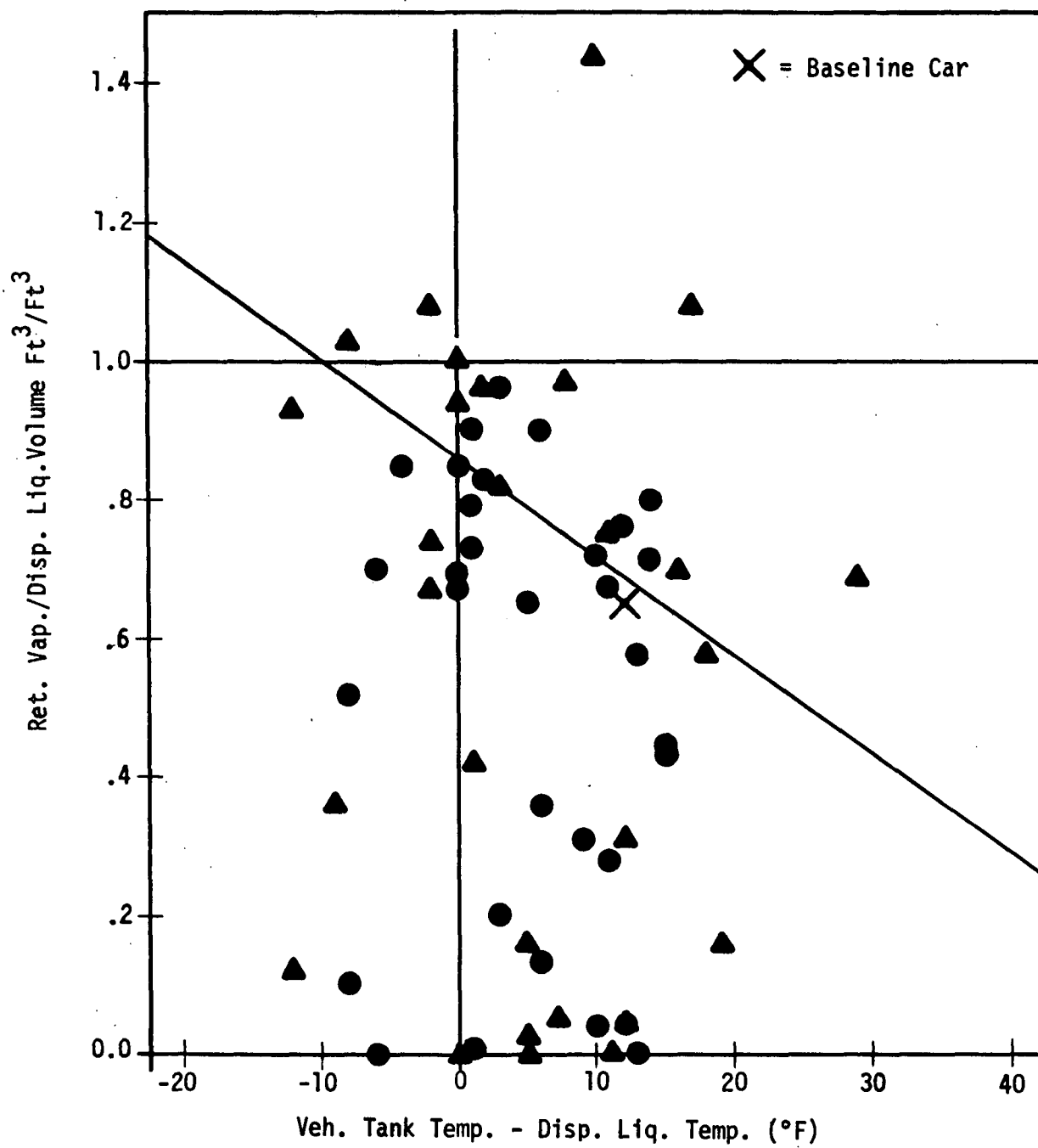


Figure 2.5 Returned Vapor Ratios - Gulf 6/13

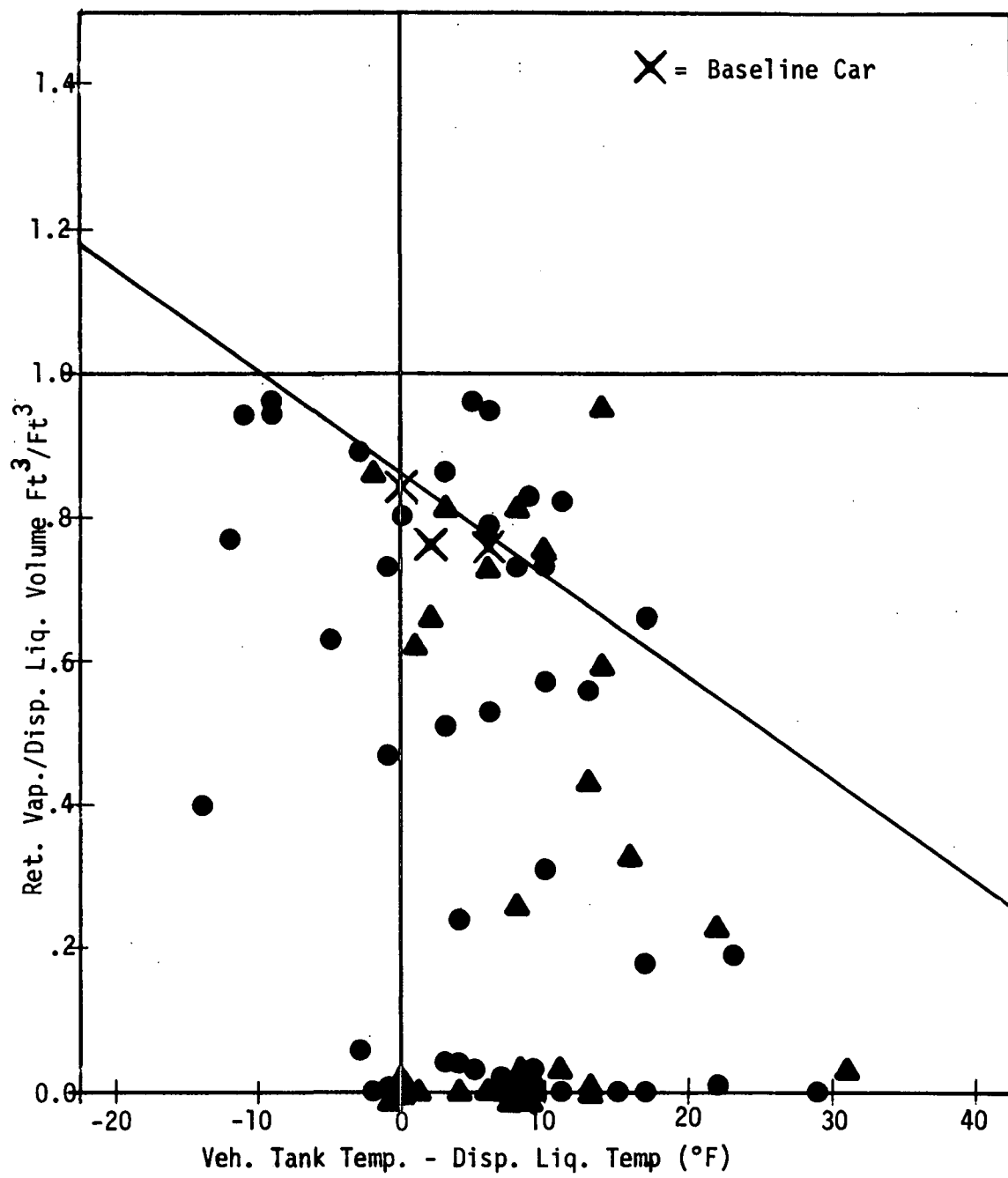


Figure 2.6 Returned Vapor Ratios - Gulf 6/14

License #	Date	Apparent Cause
V29741	6/12	Misread volume, previous car low
KUL605	6/13	Misread volume
FQA058	6/13	Low volume before & after car
582782	6/13	Low volume before & after car
222647D	6/13	Low volume before & after car
111KLP	6/13	Hot empty tank, large fill
R55989	6/14	Appears OK
P29192	6/14	Appears OK
EHY401	6/14	Misread volume
449JEL	6/17	1st car in morning (Pump 1)
15874V	6/17	1st car in morning (Pump 5)
730 HNF	6/17	Appears OK
399CQQ	6/19	Misread volume
103AFM	6/19	Hot empty tank, large fill
PHP979	6/19	Misread tank temperature

Table 2-5 High Return Volume Reading of Cars

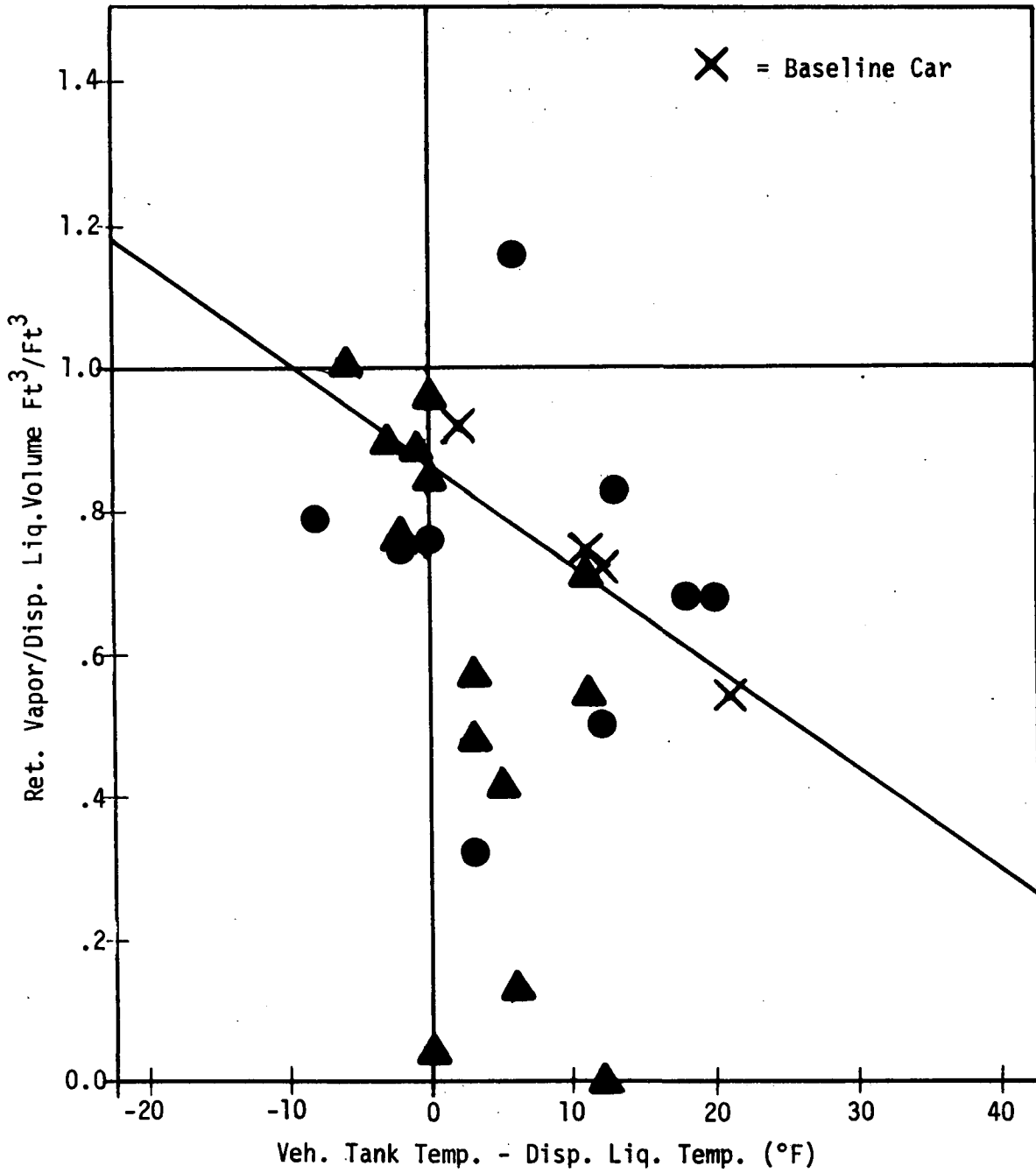


Figure 2.7 Returned Vapor Ratios - Standard 6/17

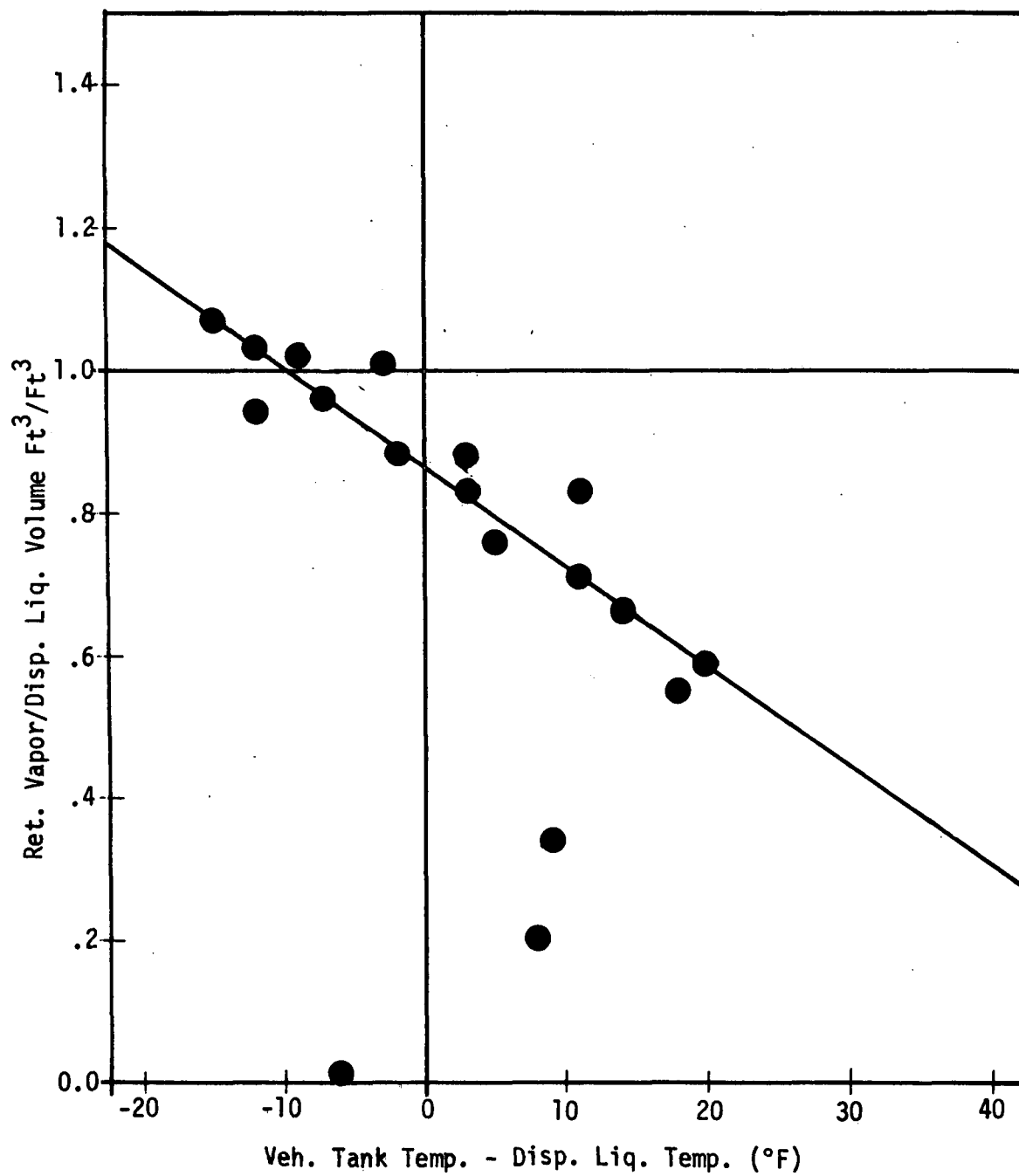


Figure 2.8 Returned Vapor Ratios - Standard 6/18

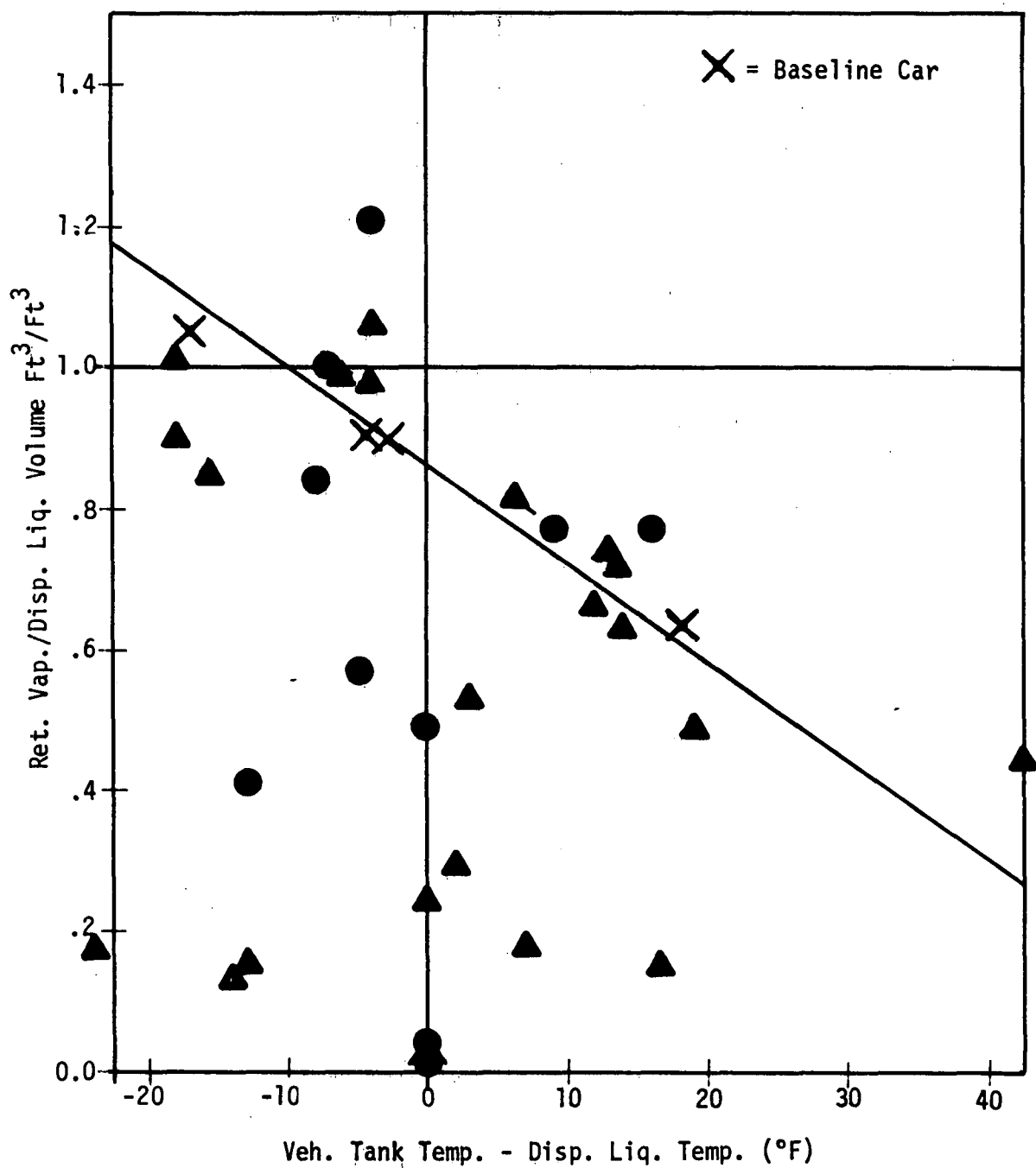


Figure 2.9 Returned Vapor Ratios - Standard 6/19

2.4.7 Explosimeter Readings

The explosimeter was used to determine whether any leaks occurred at the dispensing nozzle/vehicle tank interface. This was accomplished by moving the explosimeter probe around the interface. The interface was monitored continuously for all the balance system tests. For the secondary systems, however, the interface was monitored generally for only the first twenty to thirty seconds. If no reading was observed, the explosimeter was withdrawn. Based upon these procedures, the data recorded in Appendix B1 and B2 were obtained.

A summary of the number of vehicles with explosimeter readings is shown in Table 2-6. It should be noted, however, that a slight explosimeter reading could be obtained on many more cars at the secondary recovery systems during the end of fill. When the nozzle was shut off at the end of the fill, a puff of vapor was sometimes noted. This was not included in the indicated explosimeter readings because the amount of vapor leak was considered to be very small.

2.4.8 Fill Rates

The operators at the stations were allowed to fill vehicles at the normal rates; however, they were also requested to occasionally fill at higher rates. The normal position for filling was the middle notch of the three notches available in the nozzle. The average dispensing rate at the stations is shown in Table 2-7. The results indicate that the flow rates at the balanced system stations were slightly lower than the values at the secondary system stations. The normal dispensing rate for gasoline is 2 to 4 gpm on the first notch, 6 to 8 gpm on the second notch, and 10 to 12 gpm on the third notch. Most vehicles were filled at the second notch because it permitted time for the operator to service the car. Some cars caused premature shutoff or spitback when the highest dispensing rate was used.

2.4.9 Test Time

The time required to measure each car was approximately 7 to 8 minutes. This included noting the driving history, measuring the tank temperature, and monitoring the fill. This time compared to about 5 minutes for a conventional fill of a vehicle.

A complete test of the car, including measurement of tank pressure at the carbon canister vent line and leak checking of the tank after filling, required 15 to 20 minutes. This precluded a large number of cars from being tested because drivers were in a hurry and not inclined to wait for the test. Incentives such as free gasoline might have induced more customers to wait for a complete check.

System	Vehicle Readings		Percent
	Total	Explo. Reading	
Environics	52	17	33%
Intermark	49	17	35%
Process Products	43	9	21%
Gulf Balanced	175	121	69%
Standard Balanced	80	60	75%

Table 2-6 Explosimeter Reading During Dispensing

System	Gal/Min
Environics	6.99
Intermark	8.42
Process Products	6.51
Gulf Balanced	5.34
Standard Balanced	5.48

Table 2-7 Fill Rates

2.4.10 Spitback

Spitback was noted whenever liquid was seen to emerge from the vehicle tank. The gasoline would run down the car side or spill on the station floor. The estimates for spitback shown in Appendix B2 are judgement values and should not be used for an accurate determination. The number of vehicles with spitback are shown in Table 2-8.

The amount of spitback was higher at the secondary systems because of location of the nozzle shutoff vent. This vent is located near the tip of the dispensing nozzle. On the nozzle modified by the secondary manufacturers, this vent does not protrude as far into the vehicle tank as for the new OPW-7VN nozzle. The new OPW-7VN nozzle was used only at the balanced system stations. As a result of using a modified nozzle, liquid in the vehicle tank was able to rise closer to the exit plane before the nozzle was shut off. This increased the possibility of liquid spraying out of the vehicle tank, or, in two cases, caused the nozzle to eject from the vehicle tank.

2.5 PROCESSING UNIT PERFORMANCE

The performance of the processing unit was determined only for the secondary systems.

2.5.1 Environics System

The Environics processing unit efficiency was determined by measuring the inlet and outlet concentrations at the reactor. Mass flow through the reactor was considered to be constant. The concentration and resulting processing unit efficiency are shown in Table 2-9. The efficiency value agrees well with the San Diego APCD stated processing efficiency of 94%.

2.5.2 Intermark System

The processing efficiency for the Intermark unit was not determined because a complete flow balance could not be obtained. Subsequent inspection by the manufacturer indicated that the bladder in the surge chamber had a tear in it.

Figure 2.10 shows the attempted flow balance. 1,603 gallons of liquid were dispensed during the processing unit test. This represents 214 cu.ft. of liquid.

FILL RATE	ENVIRONICS		INTERMARK		PROCESS PRODUCTS		GULF		STANDARD	
GPM	# OF FILLS	# OF SPITBACKS	# OF FILLS	# OF SPITBACKS	# OF FILLS	# OF SPITBACKS	# OF FILLS	# OF SPITBACKS	# OF FILLS	# OF SPITBACKS
0-1	-	-	-	-	-	-	-	-	-	-
1-2	-	-	-	-	-	-	-	-	-	-
2-3	1	0	-	-	-	-	8	0	1	0
3-4	0	0	2	2	2	0	17	0	6	0
4-5	4	0	2	0	6	0	29	1	8	0
5-6	6	1	1	0	2	1	76	7	48	1
6-7	16	7	22	5	19	2	19	1	12	0
7-8	12	1	2	0	9	1	6	0	5	0
8-9	8	1	1	0	5	0	6	0		
9-10	4	1	1	0	1	1	4	0		
10-11	2	0	8	3						
11-12			9	1						
12-13			1	0						
13-14			1	0						
14-14.55			1	0						
TOTAL	53	11	51	11	44	5	165	9	80	1

Table 2-8 Fill Rate Data

A line inlet	1.9%	CH ₄
B line inlet	1.8%	CH ₄
Reactor Exhaust	0.125%	CH ₄
Processing Efficiency	$\left[1 - \frac{.125}{1.85}\right] \times 100 = 93.3\%$	

Table 2-9 Environics Processing Unit

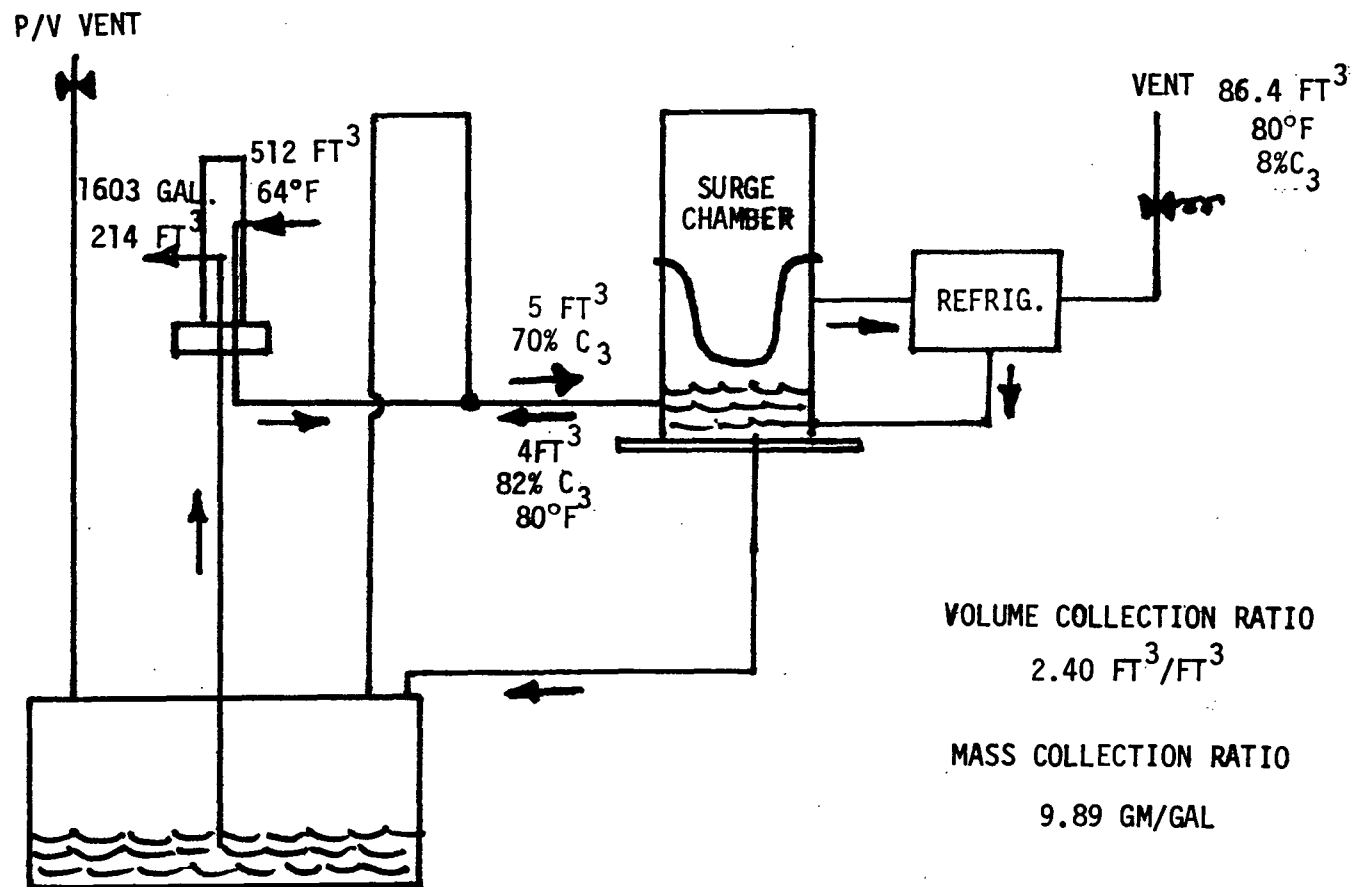


Figure 2.10 Intermark
Flow Balance

Based on a volume collection ratio of 2.40, 512 cu.ft. of vapor were returned. 214 cu.ft. was used to displace the liquid dispensed. 86.4 cu.ft. of air was vented representing 140 cu.ft. of saturated vapor. This results in approximately 158 cu.ft. of unaccounted vapor. The subsequent investigation by the manufacturer indicated that this volume could have escaped through the torn bladder.

2.5.3 Process Products System

The processing efficiency of the Process Products unit was not determined because a complete flow balance could not be attained. Figure 2.11 is a schematic showing the attempted flow balance.

The amount of liquid dispensed during the processing unit tests was 863 gallons which equals 115 cu.ft. Based on a volume collection ratio of 1.30 (cu.ft. vapor/cu.ft. liquid) determined previously at the island dispenser, the return vapor was calculated to be 150 cu.ft. Of this 150 cu.ft., 115 cu.ft. was returned to the underground tank to displace the liquid dispensed. The hydrocarbon analyzer used during the tests withdrew 5 cu.ft. Approximately 7 cu.ft. were estimated to be lost through the leaking P/V vent from a plastic bag attached to the P/V vent. This bag inflated to approximately 1 cu.ft. in 1 hour.

During the testing 2.68 cu.ft. were vented through the carbon canister. This represents approximately 5 cu.ft. of saturated vapors. Subtracting the amount removed by the hydrocarbon analyzer and the amount vented through the carbon canister, approximately 26 cu.ft. of vapors were lost. Approximately 7 cu.ft. went through the P/V vent valve, while 19 cu.ft. were unaccounted for. A reliability test program, run following this program, showed that the underground piping had a leak in the lines going to the processing unit. It appears that this accounted for the significant leak. Since no mass balance could be obtained, no processing efficiency was determined.

2.6 OVERALL SYSTEM EFFICIENCIES

The efficiencies for the vapor recovery systems were calculated from the amount of vapors vented to the atmosphere compared to the amount vented for a vehicle without a recovery system as shown in Table 2-10. For the balanced system, the amount vented to the atmosphere was considered to be the amount

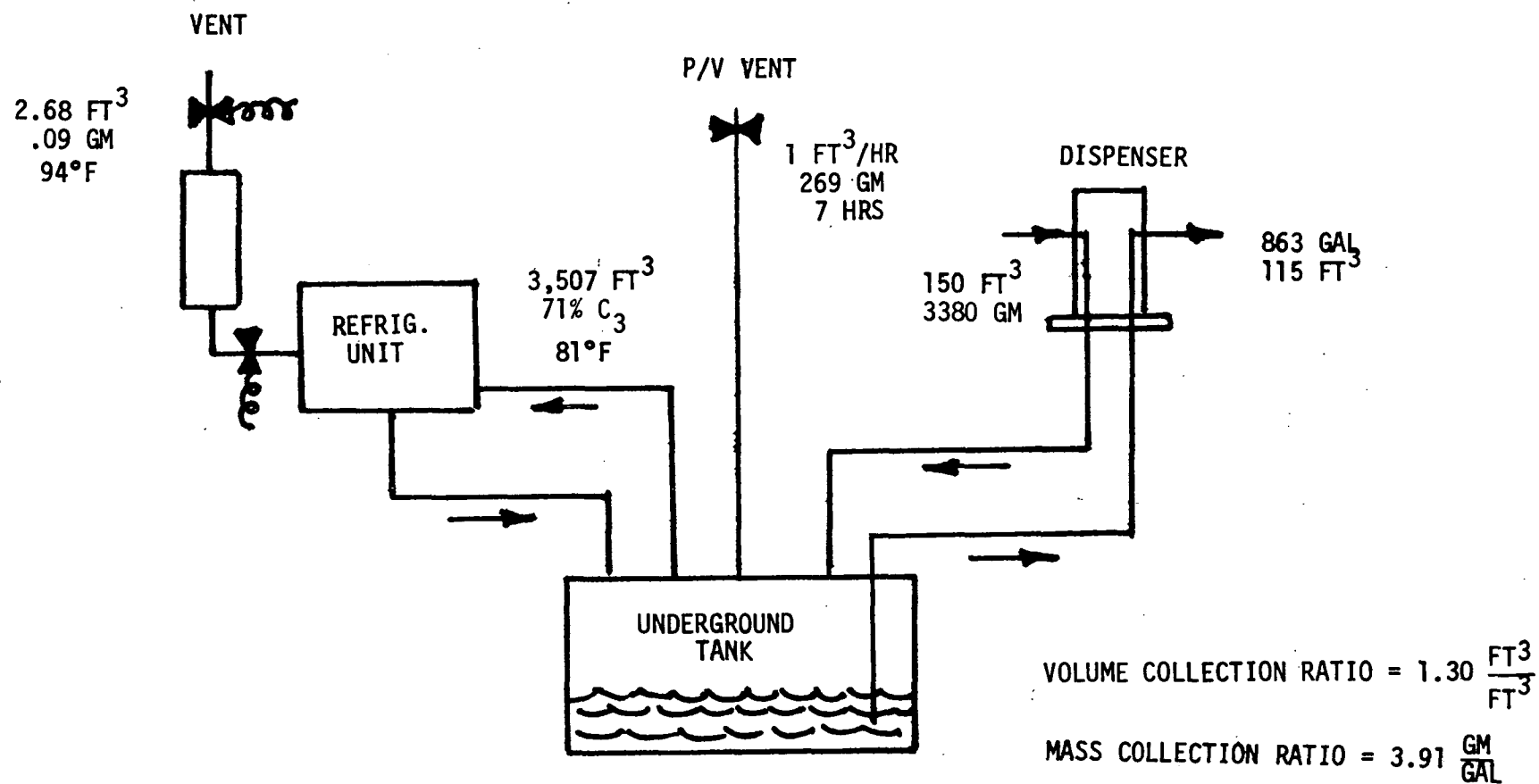


Figure 2.11 Process Products
Flow Balance

Table 2-10 Overall System Efficiency Calculation Method

Overall Efficiency:	$\left[1 - \frac{(\text{gm/gal}) \text{ emitted}}{(\text{gm/gal}) \text{ baseline}} \right] \times 100$
Balanced Systems:	$(\text{gm/gal}) \text{ emitted} = (\text{gm/gal}) \text{ baseline} - (\text{gm/gal}) \text{ vehicle}$
Secondary Systems:	$(\text{gm/gal}) \text{ emitted} = (\text{gm/gal}) \text{ vehicle} \times \left[1 - \frac{\text{Processing Unit}}{\text{Efficiency}} \right]$

lost at the vehicle tank/nozzle interface. For the secondary systems, it was considered to be the amount exhausted from the processing unit vent.

Based on this analysis the efficiencies in Table 2-11 were obtained. The efficiencies could not be calculated for two of the systems due to the leaks described previously.

Due to the wide day to day variations at the balanced stations, the data and test procedures were reviewed in an effort to identify possible causes for these variations. The higher efficiency on the first day at the Standard Station was affected by higher hydrocarbon vapor concentrations at one of the pumps. A review of the vapor concentration shown in the computer printout of Appendix C, indicates that there was a pronounced shift in vapor concentrations starting with car license No. 545 HTC on 6/17/74. A review of the strip charts as well as pre and post test calibration data does not indicate any abnormalities; nevertheless, the data for this single pump and day are approximately 10% higher than the remaining data.

The higher efficiency on the second day appears to have been influenced by the experienced station operator mentioned previously. Figures 2.4 through 2.9 show the data for the returned vapor ratios. The data show a scatter on the three days at the Gulf Station, and the first and third day at the Standard Station. The data for the second day at the Standard Station (Figure 2.8) show good correlation to the baseline curve. Only three readings out of eighteen do not follow the curve, one of them being for the first car on that day. Only one pump was used for filling and tests on that day, since a bulk drop was scheduled and the second set of measuring equipment was used to monitor the underground tank vents. The single pump dispensing the regular grade product was operated, for the most part, by an operator on loan from the Standard Oil Gas Station at Davis, California.

The data on Table 2-11 indicates a lower range of efficiencies for the Gulf Station than for the Standard Station. This may be due to a different piping layout and a slight pressure drop across the dry gas meter. The multi-product vapor return lines at the Gulf Station permit vapors to return from any open nozzle. If the restriction from one nozzle is less, more return vapors will be drawn through it. Thus, operation of a premium grade dispenser without a dry gas meter to restrict this flow could decrease the amount of vapor returned from a regular grade dispenser with a dry gas meter.

Table 2-11 Overall System Efficiencies

<u>System</u>	<u>Processing Unit Efficiency</u>	<u>Overall Efficiency</u>
Environics	93.3	89.4
Intermark	Not determined due to leak	
Process Products	Not determined due to leak	
Gulf Balanced 6/12	N/A	69
6/13		76
6/14		62
Standard Balanced 6/17	N/A	88
6/18		87
6/19		76

The pressure drop measured across the dry gas meters ranged from 0.17 in. H₂O to 0.25 in. H₂O depending upon flow. The effect of the meter in the return vapor line would have been to increase the pressure at the nozzle-filler-neck interface. This increased the possibility of vapors leaking into the atmosphere from the interface. Offsetting the pressure restriction of the dry gas meters was the directional flow valve arrangement at the underground tank vent.

The directional flow valves opened and closed in the range from 0.15 to 0.25 in. H₂O as discussed previously. At the Gulf Station these valves probably had little effect due to the interconnected tanks. At the Standard Station, the valves appear to have had an effect. The pressure measurements shown in Appendix C show that the underground tank pressure at the Standard Station was usually negative and averaged around 0.2 in. H₂O. This was borne out by the fact that the inbreathing valve was observed to be the one that opened during most of the test days. Thus the pressure drop across the dry gas meters at the Standard Station may have been offset by the reduced underground tank pressure.

2.7 RVP ANALYSIS

Reid Vapor Pressure (RVP) samples were drawn from the bulk delivered gasoline, from the gasoline in the underground tank, and from a selected number of vehicles. The RVP samples were drawn and stored in ice chests prior to the analysis. All RVP samples were analyzed by E.W. Saybolt & Co., Wilmington, California. Copies of their lab reports are included in Appendix D.

The results of the product RVP's at the stations is shown in Table 2-12. The average value of the product RVP was 8.5.

Table 2-13 shows the RVP analysis performed on the samples drawn from vehicles. The distribution of the RVP's is further shown in Figure 2.12. The average RVP for all the vehicles was 8.3. Thus, the product and vehicle RVP's were nearly equal and suggest that the volatility of the gasoline was not appreciably different.

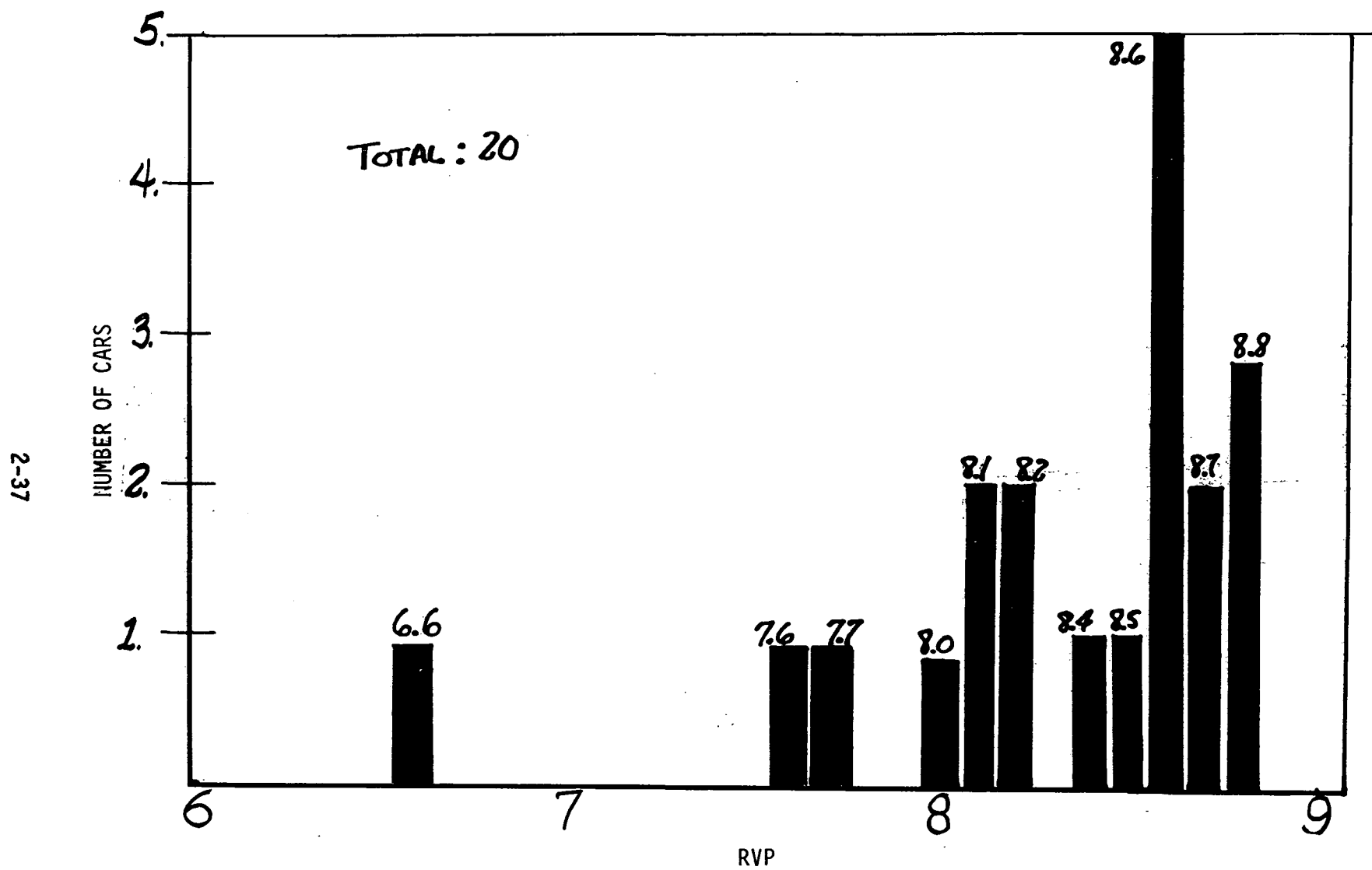
	Date	Underground Tank	Bulk Drop
Standard Station Intermark System		---	8.9
Union 76 Station Process Products System		8.6	---
Gulf Station Manifolded Balance		8.1	8.1
Standard Station Single Product Balance		8.9	9.1
Texaco Station Environics System		---	8.3
Union 76 Station Process Products System		8.6	7.9*
Standard Station Intermark System		---	---

*Sample taken from fill tube after drop. Product delivered from Los Angeles.

Table 2-12 Product RVP Analysis

License #	Time	Driving History	Date	RVP
G1157827	0830	Freeway 12	6/7	8.1
079 EQU	1055	Freeway 100	6/11	8.6
059 GJX	1745	Freeway 8	6/11	7.4
1043376	0930	Freeway 9.7	6/12	8.8
312 HPO	1105	Local 0	6/12	7.6
909 JSZ	1310	Freeway 8	6/13	8.6
452 80L	1335	Local 0.2	6/13	8.1
603 GBY	0910	Freeway 15	6/14	8.8
312 HPO	0940	Freeway 6	6/14	6.6
TUS 029	1525	Freeway 8	6/14	8.4
KTR 796	1445	Standing	6/14	8.7
918 KKL	1150	Freeway 15	6/17	8.5
932 HWN	1400	Local 3	6/17	8.8
574 KMK	1610	Freeway 118	6/17	8.2
572 FFR	1345	Freeway 20	6/18	8.6
ZND 264	1425	Parked	6/18	8.6
603 GBY	0750	Freeway 8	6/19	8.0
438 JUA	0835	Local 3	6/19	8.7
907 KES	0930	Freeway 8	6/19	8.6
662 FZG	1100	Freeway 100	6/20	8.2

Table 2-13 Vehicle RVP Analysis



2.8 MOLECULAR WEIGHT ANALYSIS

A gas chromatograph/flame ionization detector was used in the field to obtain molecular weights of the gasoline vapors. Insufficient separation of the C_4 , C_5 , and C_6 hydrocarbon peaks, however, made reduction of this data difficult. Individual span gases for the C_4 , C_5 , and C_6 hydrocarbon fractions were not obtainable in the field. Several peaks were noted during field measurements and were thought to be the C_4 , C_5 , and C_6 peaks. Subsequent calibration in the laboratory showed that the peaks were C_6 peaks and higher. Only one chromatogram could be obtained which could be successfully analyzed. This chromatogram was obtained from a sample taken 2 inches down the fillneck of an automobile. The fractions of hydrocarbons were as follows:

C_4H_{10} - 36.1 %

C_5H_{12} - 54 %

C_6H_{10} - 9.8 %

The molecular weight of the hydrocarbons in this vapor sample was calculated to be 68.1

2.9 PROBLEMS ENCOUNTERED

2.9.1 Environics

The testing of the Environics system proceeded without significant problems. The vehicle collection was performed on one day and the bulk drop and processing unit efficiencies were determined on the second day. On the evening of the first day one of the test technicians inadvertently opened a line from the carbon canister to the processing unit. The processing unit was immediately shut down and the lines reconnected. Subsequent checks showed that this did not affect the system.

2.9.2 Intermark

The Intermark system tests were performed over a three-day period. The initial test program consisted of vehicle collection tests on one day and processing unit tests on the second day. On the second day, an exhaust valve froze up around noontime causing raw liquid to be discharged at the exhaust vent. The test was immediately discontinued to determine the cause of this failure. The cause could not be readily determined so that the tests were discontinued for the day.

It was decided to retest this unit at the end of the test program in order to obtain processing unit data. During this third day of testing it was noted that high explosimeter readings were obtained at the breathing vent for the surge tank bladder. It was subsequently determined that the bladder had torn and was causing vapors to leak out to the atmosphere.

2.9.3 Process Products

The Process Products system tests were performed over a four-day period. Initially only two days of testing were planned, with the first day for vehicle collection tests and the second day for processing efficiency tests. The first day at the station did not see any tests performed because Union 76 withheld permission to conduct the tests. On the second day, permission was obtained and vehicle collection tests were performed. It was then decided to return to the station at the end of the test program to obtain an additional day of vehicle refueling data and one day of processing unit performance data. Several problems were noted with this system. One of the ITT valves regulating vapor return flow was noted to be leaking at the liquid line inlet. This leak did not effect the vapor return line so that it was decided to proceed without replacing the valve.

It became evident during the test that significant quantities of excess air were ingested into the system without any of it venting. During the two days at the beginning of the program as well as during the two days at the end of the program, the system never vented. The refrigeration unit occasionally came on for a short while in the morning, but no exhaust was noted. San Diego APCD personnel indicated that this lack of venting indicated high processing efficiency. However, it appeared more likely that a leak was occurring somewhere in the system.

The system does not start until the underground system pressure rises to three inches of water. It was noted on several occasions that there was a slight pressure buildup during refueling but that this pressure decayed without the unit starting. Since excess air is ingested during vehicle refueling this air must be discharged somewhere. During reliability tests subsequent to these tests, an underground leak in the vapor return piping was discovered. It appears that this leak was caused during initial construction, and was never located in previous testing.

It should also be noted that the flow through the processing unit was approximately 3,000 cu.ft. per hour, and that on the day of bulk drop the unit remained on for approximately 1 hour. During this time, the inlet concentration remained at approximately 71% by volume of propane and 80°F for the entire hour.

The flow of 3000 cfh was measured on a dry gas meter rated at 1000 cfh. This caused the pressure drop across the meter to be higher than normal. Calibration of the meter before and after testing, however, showed that this high flow did not damage the meter.

Another problem observed at this station was the leaking P/V vent valve. The valve was changed, but the new valve also leaked.

2.9.4 Gulf Balanced

The problems encountered at the Gulf Balanced station were minimal. The OPW-7VN nozzle had only been installed recently so that the personnel were inexperienced in using them. Some problem was encountered in hooking the nozzle to the lip of the vehicle fill tank. The only malfunction occurred when an attendant left the nozzle in the gas tank and the vehicle was driven off. The nozzle was sheared at its designed breakaway notch. The nozzle was not dispensing at the time and no liquid was spilled.

2.9.5 Standard Balanced

No major problems were encountered at the Standard Balanced station. This station was a new station so that the operators were inexperienced in using the OPW-7VN nozzle. An experienced attendant was brought down from the Standard Station at Davis, California, to assist in education of the attendants. Filling of the vehicles was done by the experienced attendant as well as regular station personnel, except for the second day of operation. While no specific records were kept it appears that the experienced attendant did service a majority of the 18 cars during that day. Traffic through the station was quite low due to it opening up just the week previously.

3.0 PROCESS DESCRIPTION

3.1 ENVIRONICS

The system manufactured by Environics is shown in Figure 3.1. This system has two modes of operation depending upon whether there is a bulk drop or vehicle refueling. For a bulk drop, the excess vapors are passed through a carbon bed and vented to the atmosphere. As the pressure in the underground tank builds up during a bulk drop, the solenoid valve connecting the carbon bed to the remainder of the system is closed. Thus all the excess vapors are passed through carbon bed #2. Approximately six hours after a bulk drop, the solenoid valve is opened and carbon bed #2 is connected directly to the remainder of the processing unit. Carbon bed #2 is stripped by inbreathing of the underground tank for six hours after the bulk drop as well as during normal unit operation after the six hour time period.

The processing unit for automobile refueling operates on a vacuum suction principle. The hydrocarbon vapors are drawn from the vehicle tank and through parallel connected carbon beds. These carbon beds adsorb the hydrocarbon from the vapor stream. Upon completion of gasoline dispensing at the island, solenoids are activated to close the vapor intake line to each carbon bed and open an air intake line at the opposite end of the carbon beds. The vacuum pump is then used to desorb the hydrocarbon from the carbon beds by reverse flow. The hydrocarbons are pumped into a catalytic reactor where they are incinerated. The exhaust from the reactor is vented to the atmosphere.

The unit which was tested was installed a week before the test and had a flow system which was different from schematics provided by San Diego APCD. The new processing unit replaced an older unit which had been operating on site for several months. Flow diagrams for the new system were not available from the manufacturer. The previously installed unit operated on a cycle whereby one carbon bed was adsorbing hydrocarbons from the island dispenser line while the other carbon bed was being desorbed by the vacuum pump. In that mode the system operated on a reversing cycle lasting approximately three minutes for each cycle.

The performance of the system was determined by measuring at the sampling points shown on Figure 3.1. Flow, volume, concentration, pressure, and temperature were measured at the inlet and outlet of carbon bed #2 during bulk drop.

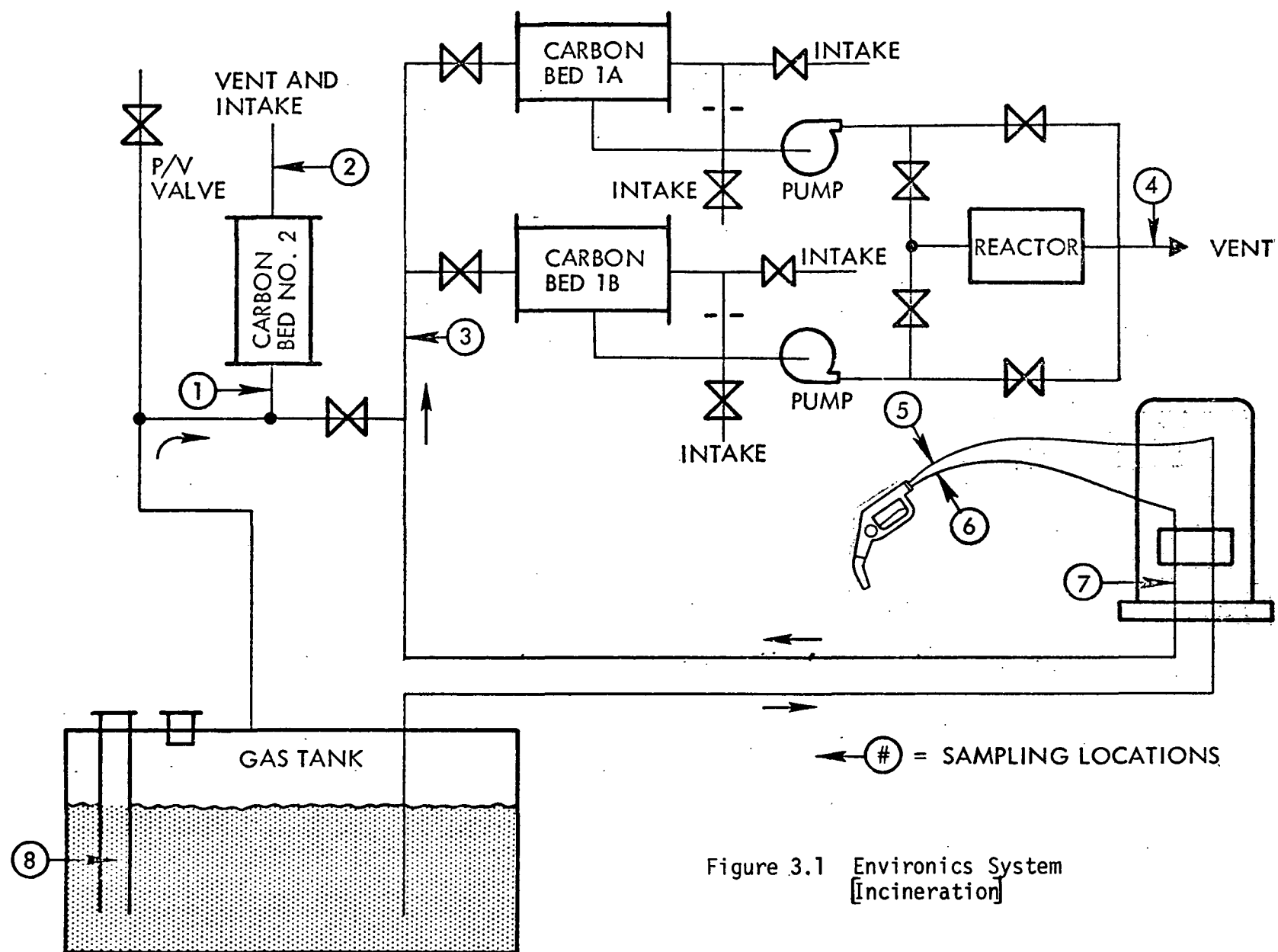


Figure 3.1 Environics System
[Incineration]

These points were monitored to measure the efficiency of the carbon bed and ensure that no breakthrough of vapors occurred. Subsequent to the bulk drop, the test equipment at the outlet of the carbon bed was removed and used on the other portion of the processing unit. Volume, concentration, pressure and temperature measurements were continued on the desorption side of the carbon canister to show when this process had been completed.

The efficiency of the processing unit was determined by measuring the concentration of vapors into and out of the reactor. Dry gas meters were installed at the inlet to the individual carbon beds of the processing unit; however, these were only used to provide data on flow balance between carbon beds. It was assumed that the volume of flow into and out of the reactor was the same for efficiency calculations.

A plastic bag was placed over the P/V valve in order to capture any leaking vapors.

3.2 INTERMARK

The Intermark system is diagrammatically shown in Figure 3.2. This system utilizes a high pressure refrigeration-condensation process to remove hydrocarbons from the returned vapors. The vacuum pump (blower) is located at the processing unit. It pumps the collected vapors through a bed of saturated liquid located within a surge tank. The surge tank and its moveable bladder are used primarily for evening out large volumes which may occur during bulk drop. The saturated vapors from the lower half of the surge tank are compressed in a two-stage high pressure refrigeration unit. The condensed liquid is returned to the surge tank liquid basin while the dry vapors are vented directly to the atmosphere. The overflow liquid from the bottom of the surge tank is returned to the underground gas storage tank.

The processing efficiency of the Intermark unit was determined by measuring the volume, concentration, pressure and temperature of the vapors entering the surge tank as well as those leaving the processing unit to the atmosphere (Figure 3.2). The tests during bulk drop as well as during vehicle refueling were started and ended with the surge tank bladder at the bottom position.

A plastic bag was also placed over the P/V vent in order to capture any leaking vapors.

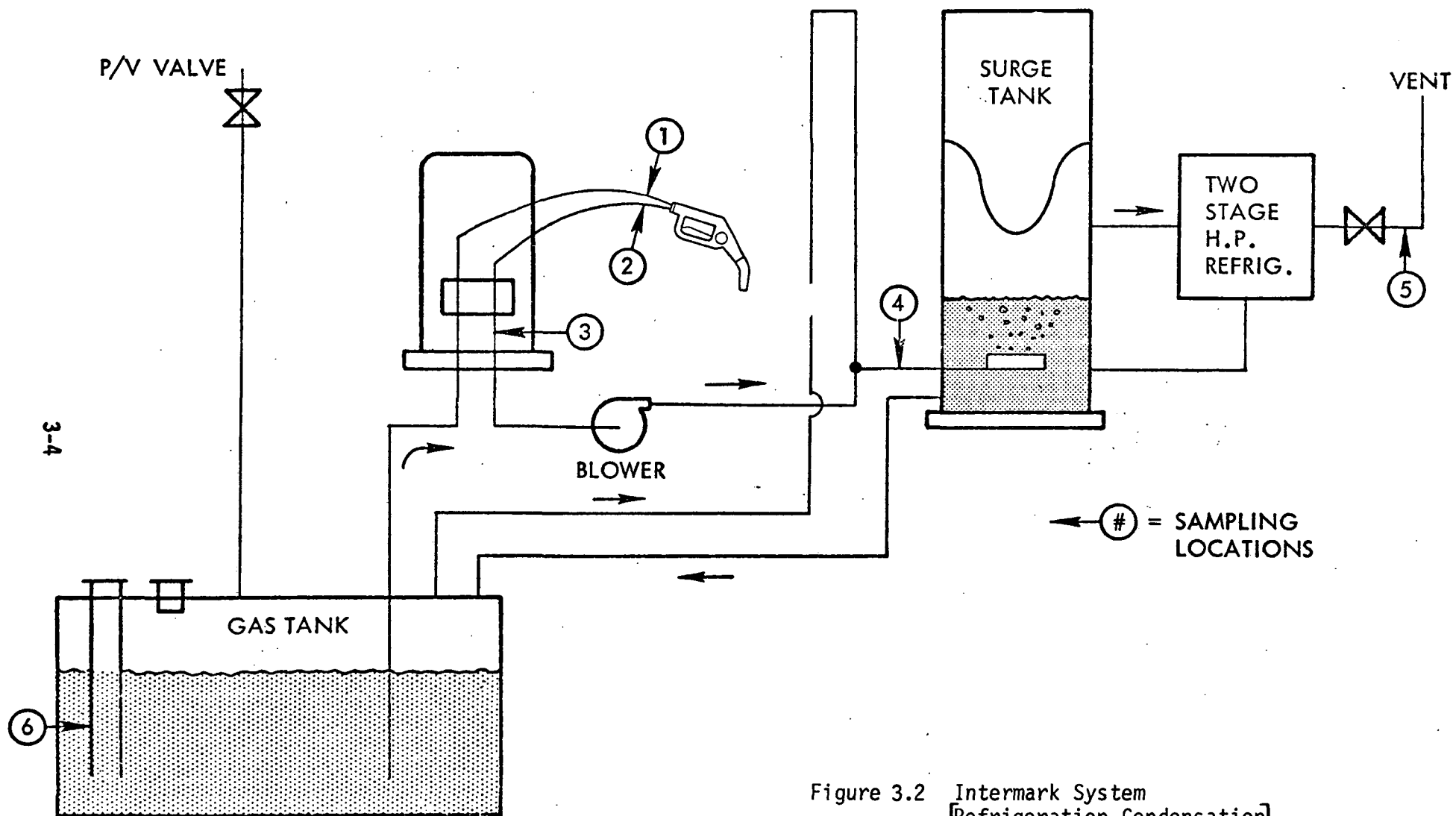


Figure 3.2 Intermark System
[Refrigeration-Condensation]

3.3 PROCESS PRODUCTS

The Process Products flow system is shown in Figure 3.3. The system operates in the same manner for a bulk drop as for vehicle refueling. A vacuum blower at the island dispenser draws the vapor from the vehicle tank and pumps it to the underground tank. The system uses a special flow control valve to regulate the amount of vapor return depending upon the liquid dispensing rate.

The refrigeration-carbon adsorption unit operates on a separate flow loop. The unit is started whenever the pressure of the underground tank reaches three inches of water. The refrigeration system and blower are started at that pressure and the vapors are passed across the low temperature cooling coils. During this time the valves to the carbon canister are closed.

When the underground tank pressure reaches five inches of water, the inlet valve to the carbon canister is opened to permit the carbon canister to reach atmospheric pressure. At the same time, the blower next to the refrigeration unit is turned off and vapors allowed to flow by convection.

When the underground tank pressure reaches seven inches of water, valve B is opened and excess vapors are allowed to vent through the carbon canister to the atmosphere. When the system pressure has dropped to one and one-half inches of water the refrigeration unit is turned off and the solenoid valves are closed. The vacuum pump is then started and continues to operate for seventy minutes to desorb the carbon canister. The unit is then ready to repeat the cycle.

In case seven inches of water are not reached within sixty minutes, valve B is opened to permit excess air to pass through the carbon canister.

This unit was installed a few days prior to the test, and replaced a previously installed unit.

The efficiency of the processing unit was determined for bulk delivery as well as vehicle refueling by measuring the volume, concentration, pressure and temperature at the inlet to the refrigeration unit as well as the exit from the activated carbon canister.

A small activated carbon canister was attached to the Process Product carbon canister during vehicle refueling tests as well as for overnight venting.

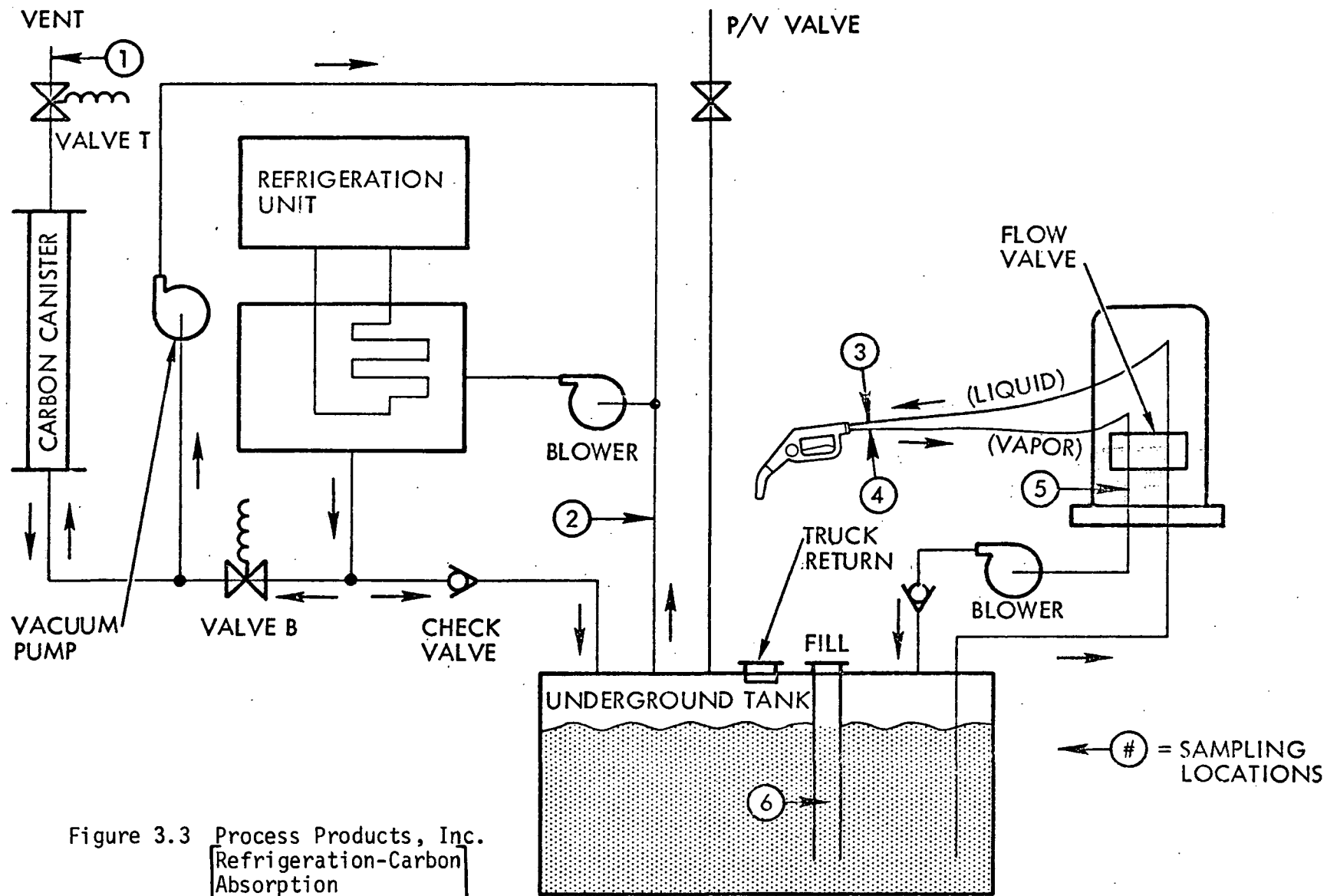


Figure 3.3 Process Products, Inc.
Refrigeration-Carbon
Absorption

A plastic bag was placed over the P/V vent to determine any leaks. As noted in Section 2.9, this valve was leaking during the tests since the bag inflated.

3.4 GULF OIL BALANCED

The configuration of the balance system at the Gulf Oil station is shown in Figure 3.4. This configuration consisted of a single manifold return line from each island. The vapor lines from each product dispenser were manifolded to this single return line which was connected to the premium tank. Additional lines were installed in the station to provide for future changes to the system. These lines ran to a manifold connecting all three grades of underground tank storage. Each underground tank had a separate vent at the back of the station. These vents were manifolded together during the tests to form a common outlet.

3.5 STANDARD OIL BALANCED

The Standard Oil balance system diagram is shown in Figure 3.5. This system utilizes separate return lines for each product grade. The vapor return lines for each grade at the island dispenser are manifolded back through a common grade return line to the underground tank. The underground piping includes lines for subsequent installation of additional recovery equipment.

3.6 VEHICLE SAMPLING LOCATIONS

The sampling location for measuring vehicle collection efficiencies was the same for all systems as shown in Figure 3.6. The temperature of the dispensed liquid and the returned vapor was measured at the back end of the fill nozzle. Volume, pressure and concentration of the returned vapors was measured where the flexible hose attaches to the island dispenser.

Prior to vehicle filling, the vehicle tank temperature was measured by inserting a probe into the gas tank. Vehicle data such as make, model, and immediate driving history were also obtained at that time. On selected post-1970 cars, the vent line to the carbon canister was disconnected and a manometer attached to measure tank pressure during filling. Samples for RVP analysis were also obtained prior to filling on selected post-1970 vehicles.

As the vehicle was being filled a leak check was performed around the gas tank nozzle interface with an explosimeter reading on the 0-1 LEL scale.

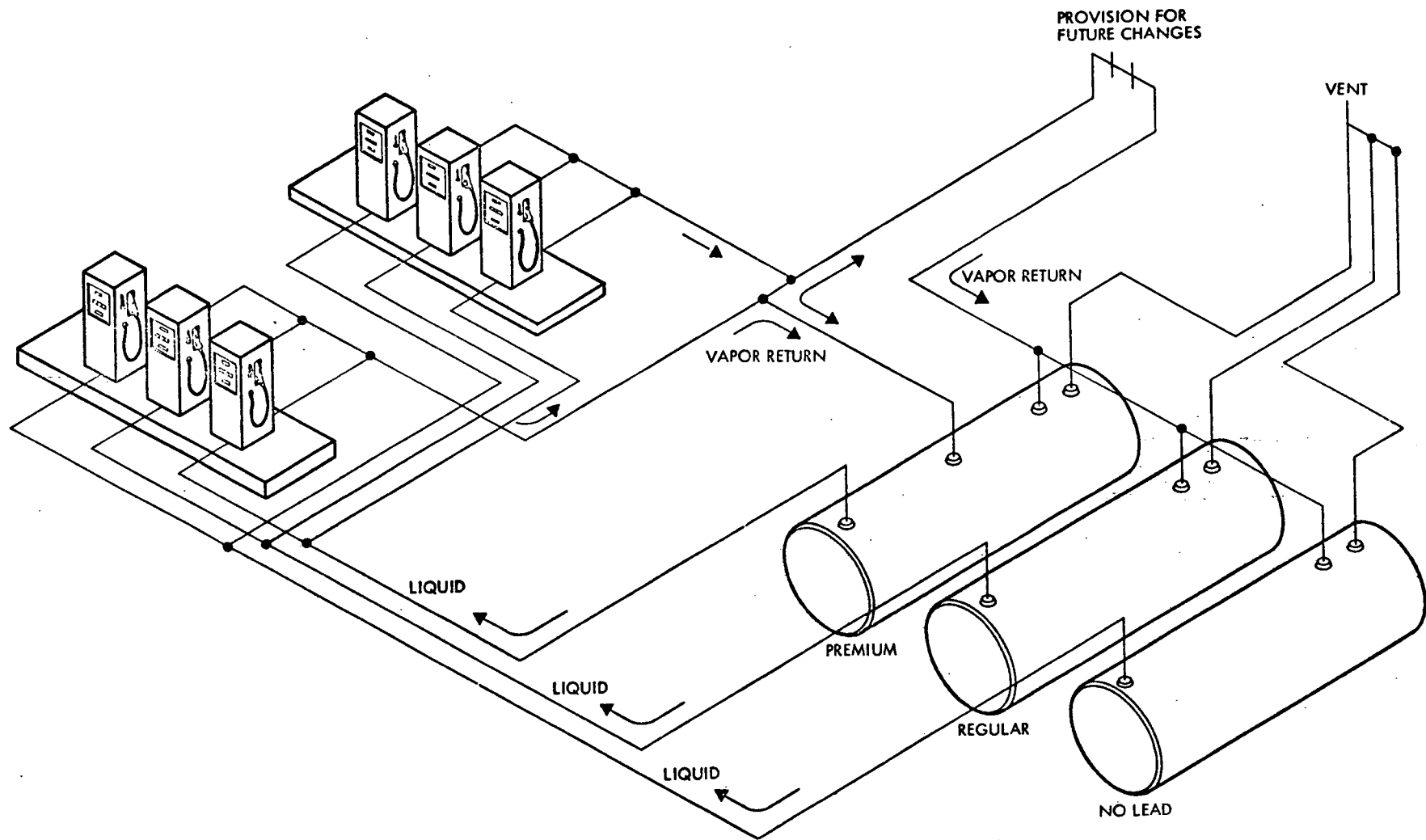


Figure 3.4 Gulf Oil Company Multi-Product Balanced System

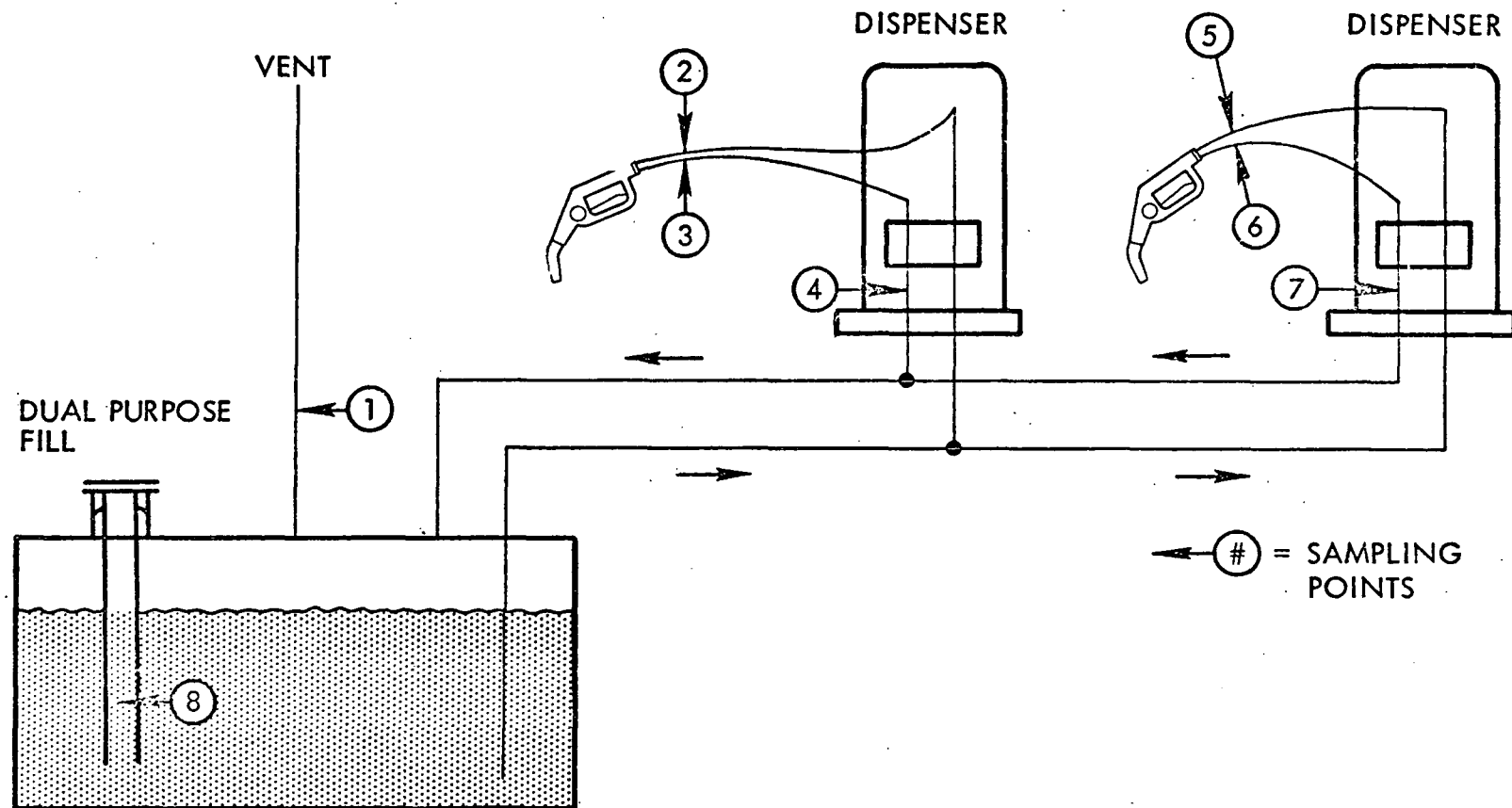


Figure 3.5 Standard Oil Company
[Single Product Balanced System]

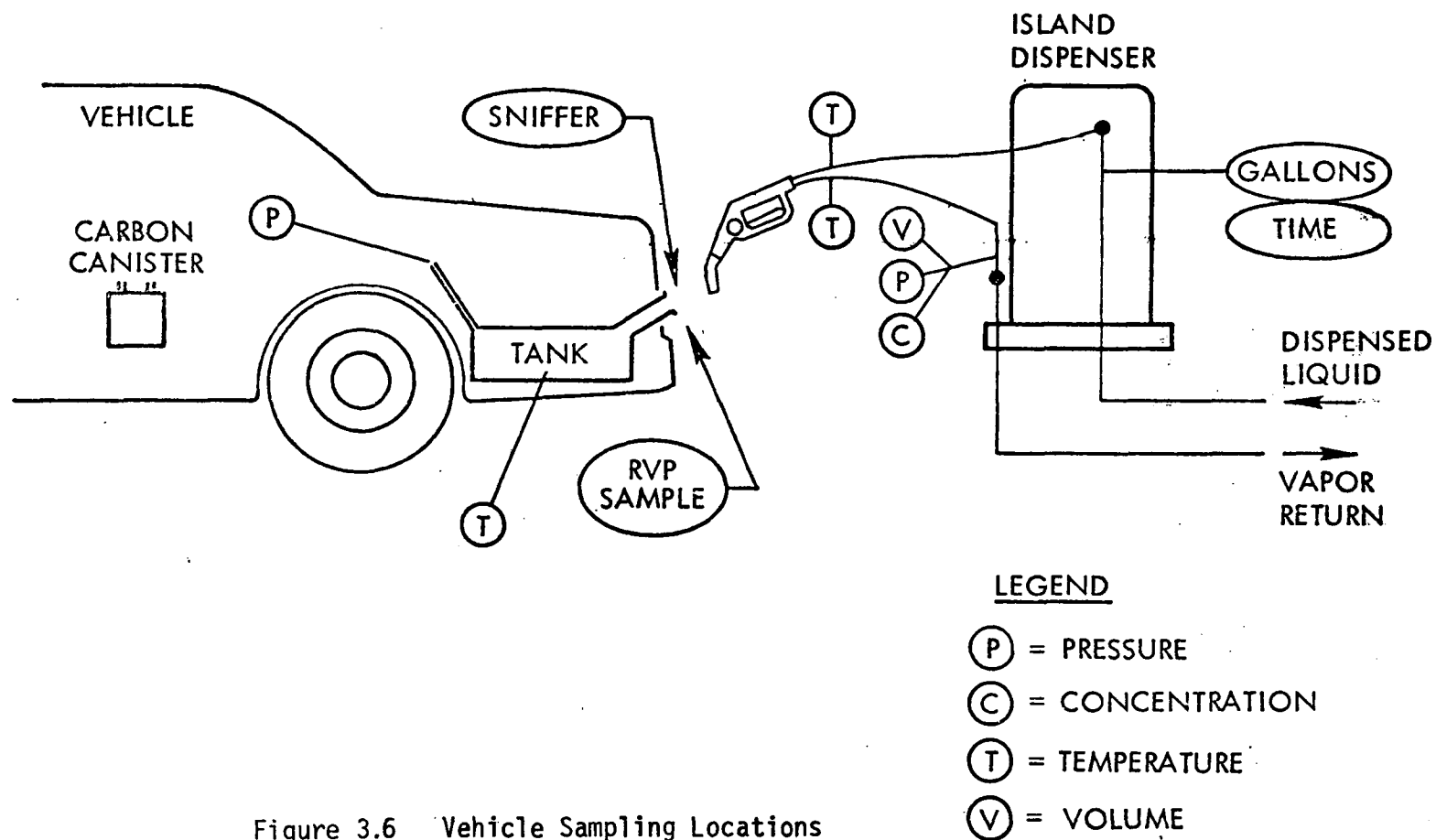


Figure 3.6 Vehicle Sampling Locations

This sniffer check was used to indicate if any vapors were escaping. It should be noted that this sniff test in no way indicates the volume of leak when the meter shows an indication.

The amount of fuel dispensed was taken directly from the island gallonage dispenser. In addition, the time required for filling was noted as well as the total time that the dispensing nozzle remained in the vehicle tank.

4.0 SAMPLING METHODS

4.1 EQUIPMENT

The major equipment used for the test program is shown in Table 4-1.

4.1.1 Hydrocarbon Concentrations

Hydrocarbon concentrations were measured by two different instruments providing continuous output of hydrocarbon concentrations. One instrument was a Beckman 109 flame ionization detector which was used as is for hydrocarbon concentrations less than 10% by volume. For hydrocarbon concentrations in excess of 10% by volume, a dilution board was used to provide a 100% by volume propane output reading. The dilution board consisted of flow meters to measure the sample stream as well as the zero air dilution stream. The dilution air was delivered from a zero air gas cylinder through a constant pressure regulator. The flow rates through the dilution board were maintained at the flow rates set during the calibration runs.

The second analyzer was a Beckman 400 flame ionization detector which had been modified by TRW to provide direct reading of 100% by volume propane. This modification was made by installing suitable capillaries to reduce sample flow size. The modified analyzer was calibrated in the laboratory with diluted standards and provided the data shown in Figure 4.1.

Both analyzers were calibrated at the beginning and end of each day by spanning with 100% propane gas. In addition, a 2.06% methane calibration gas was used whenever concentrations below 10% were measured.

In addition to the continuous analyzers, a portable AID gas chromatograph-flame ionization detector was used for obtaining molecular weights of the gases. The calibration gases available for this unit in the field were the same two indicated above.

Hydrocarbon vapors were also detected by the use of a Bachrach SSP Explosimeter. This unit measured hydrocarbon vapors in the 0-1000 ppm and 0-1.0 LEL (Lower Explosive Limit, approx. 2% CH_x) ranges. This unit only measures relative concentration AND NOT VOLUME.

<u>Parameter</u>	<u>Equipment</u>
Hydrocarbon Concentration	Beckman 109 F.I.D. Beckman 400 (Mod) F.I.D. AID GC/F.I.D. Bacharach SSP Explosimeter
Pressure	0-6" H ₂ O Dwyer Manometer 0-4" H ₂ O Dwyer Manometer 0-2" H ₂ O Dwyer Manometer 0-1" H ₂ O Dwyer Manometer 0-6" H ₂ O Magnehelix Gauge 0-140" H ₂ O Magnehelix Gauge 30 " U-Tube Manometer
Temperature	-100 to 300°F Strip Chart Recorder -100 to 300°F Strip Chart Recorder -100 to 300°F Thermo Electric Bridge -32 to 140°F YSI Temp. Probe Misc. Glass Thermometers
Volume	1000 cfh Sprague Dry Gas Meter 1000 cfh Sprague Dry Gas Meter 175 cfh Sprague Dry Gas Meter 175 cfh Sprague Dry Gas Meter 150 cfh Rockwell Dry Gas Meter Calibrated Polyethylene Bag

Table 4-1 Major Equipment List

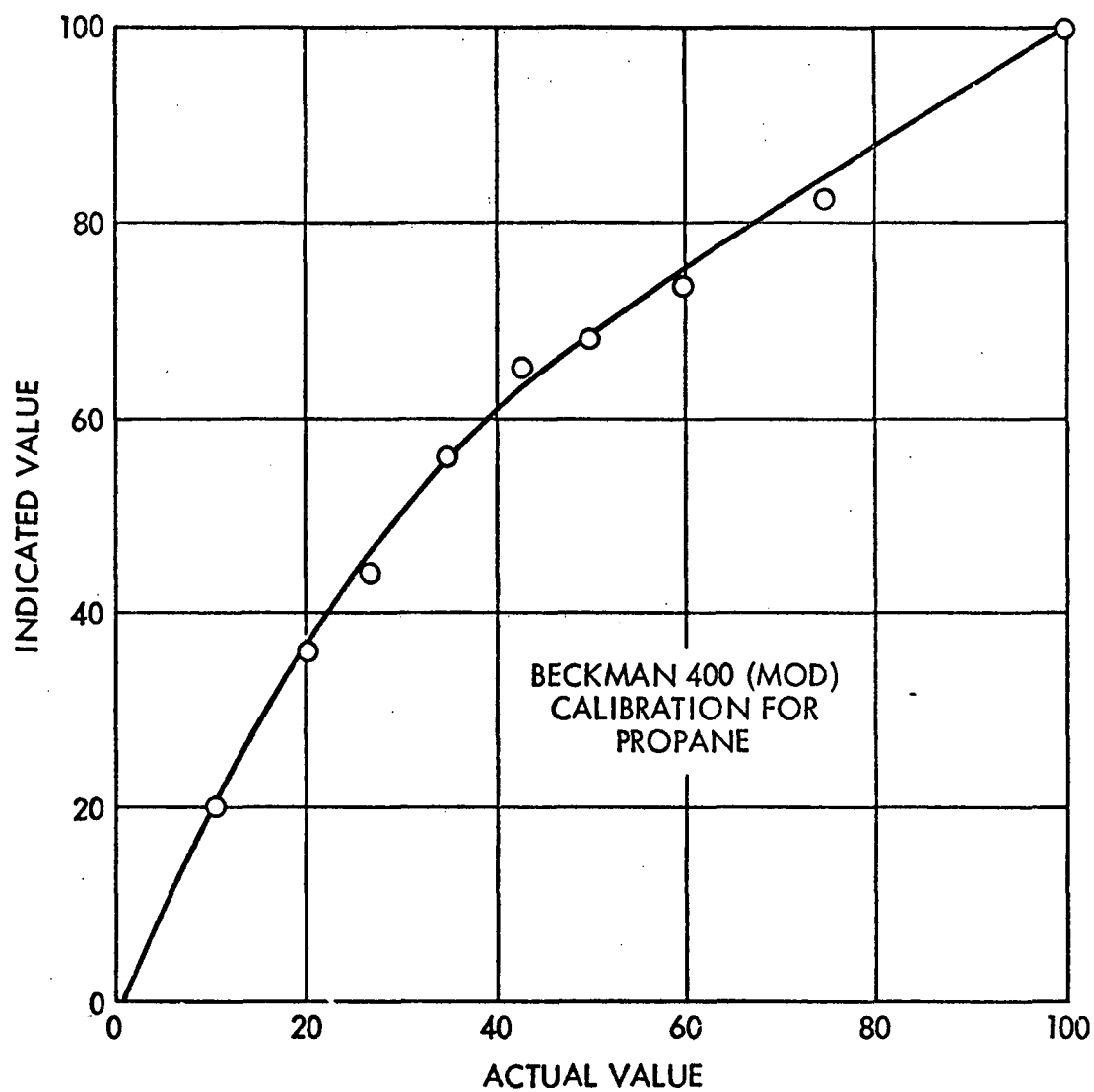


Figure 4.1 Hydrocarbon Analyzer Calibration

4.1.2 Pressure

Pressures at the various test points were measured using Dwyer liquid level gauges as well as U-tube manometers. In addition, a vacuum dial gauge and Magnehelix gauges were used as required.

4.1.3 Temperature

Temperatures of the dispensed liquid and the returned vapor were measured by thermocouples. The dispensed liquid temperature was continuously recorded on a strip chart recorder. The vapor temperature was measured by portable Thermo Electric reference cells and read manually.

The underground tank temperatures were measured by thermocouples attached to the pole used to measure liquid level. The temperatures were manually read from the reference cells.

Vehicle tank temperature was initially measured using thermocouples and Thermo Electric reference cells. Early in the program, however, a Yellow Springs Instrument direct readout thermister unit was obtained for measuring vehicle tank temperatures.

4.1.4 Volume

Volume of vapors were measured in all cases by dry gas meters. The vapor return line vapors were measured using 175 cfh dry gas meters with liquid traps ahead of the meters. These traps were used to prevent liquid gasoline due to spitback from entering the meters. Flow at several of the processing units which exceeded a few hundred cubic feet per hour was measured using 1000 cfh dry gas meters.

Volumes during bulk drop at the balanced stations were measured by a long polyethylene bag. The bag length was calibrated by filling through a dry gas meter. The calibration data is shown in Figure 4.2

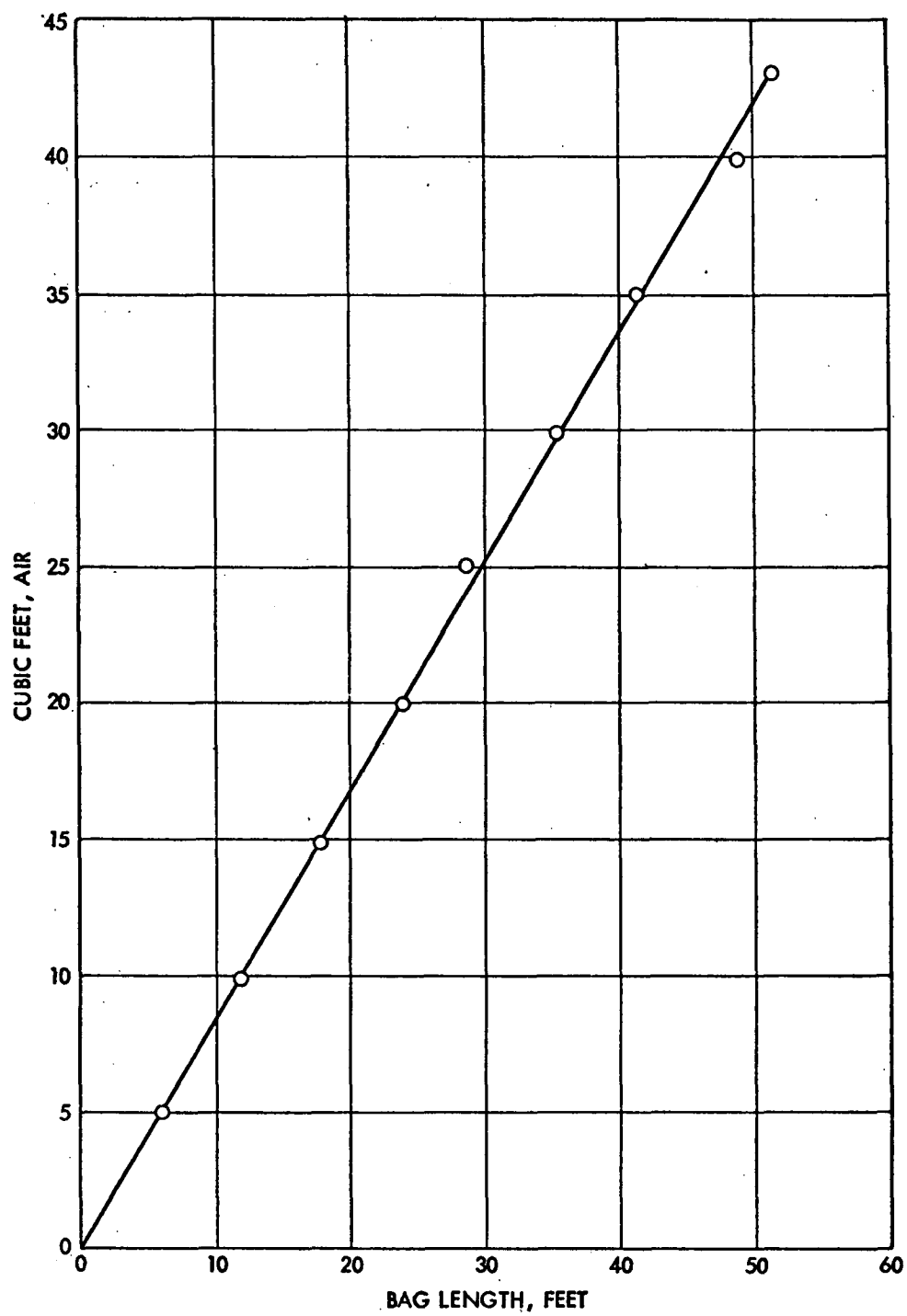


Figure 4.2 Polyethylene Bag Volume

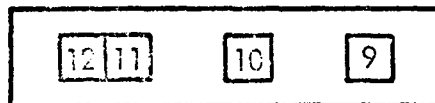
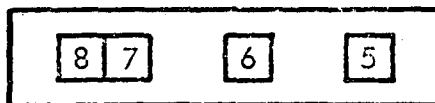
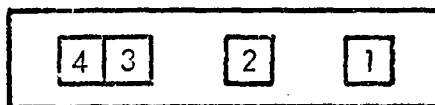
APPENDIX A
DAILY STATION DATA

ACCESS ROAD

INTERMARK UNIT



STANDARD
STATION



CARMEL VALLEY ROAD

A-1

INTERMARK SYSTEM
STANDARD STATION LAYOUT

Station Standard, Carmel Valley Rd. & I5Date 6-6-74Vapor Recovery System Intermark

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:50</u> Hrs	<u> </u> Hrs	<u>6:30</u> Hrs
Dry Bulb Temp.	<u>68</u> °F	<u> </u> °F	<u>63</u> °F
Wet Bulb Temp.	<u>60</u> °F	<u> </u> °F	<u>59</u> °F
Relative Humidity	<u>63</u> %	<u> </u> %	<u>79</u> %
Ambient Pressure	<u>29.87</u> " Hg	<u> </u> " Hg	<u> </u> " Hg
Wind Velocity	<u>calm</u> ft/sec	<u> </u> ft/sec	<u>5-7</u> ft/sec
Overcast	<u>100</u> %	<u> </u> %	<u>100</u> %

	<u>Start of Day</u>	<u>End of Day</u>
No-Lead (5,000 gal)	<u>1275</u> gal <u>72</u> °F	<u>1125</u> gal <u>73</u> °F
Low-Lead(10,000 gal)	<u>925</u> gal <u>67</u> °F	<u>5000</u> gal <u>72</u> °F
Premium (10,000 gal)	<u>3600</u> gal <u>72</u> °F	<u>5100</u> gal <u>73</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:50</u> hrs	<u>6:30</u> hrs	
Pump 1	<u>75299</u>	<u>75927</u>	<u>628</u>
2	<u>21021</u>	<u>21138</u>	<u>117</u>
3	<u>74273</u>	<u>68064</u>	<u>379</u>
4	<u>31749 (note)</u>	<u>90766</u>	<u>N/A</u>
5	<u>44311</u>	<u>45273</u>	<u>962</u>
6	<u>48744</u>	<u>48846</u>	<u>102</u>
7	<u>59185</u>	<u>59709</u>	<u>524</u>
8	<u>13715</u>	<u>13862</u>	<u>147</u>
9	<u>38782</u>	<u>38782</u>	<u>0</u>
10	<u>12697</u>	<u>12697</u>	<u>0</u>
11	<u>94816</u>	<u>94816</u>	<u>0</u>
12*	<u>29444</u>	<u>30029</u>	<u>585</u>

*Tested pump

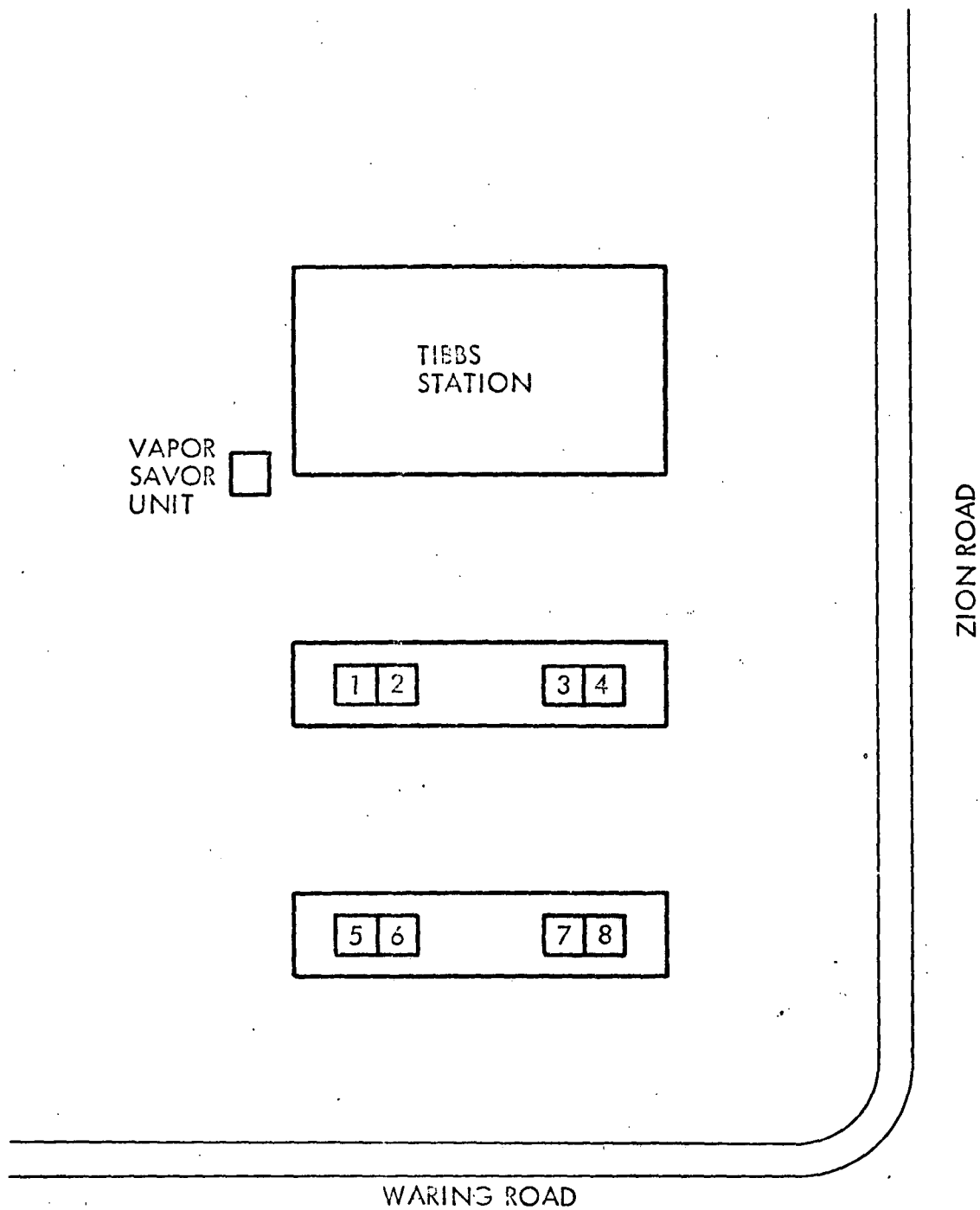
Note: Pump 4 initial reading in error A-2

Station Standard, Carmel Valley Rd. & I5Date 6-7-74Vapor Recovery System Intermark

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>8:30</u> Hrs	<u>12:45</u> Hrs	<u>5:00</u> Hrs
Dry Bulb Temp.	<u>62</u> °F	<u>64</u> °F	<u>64</u> °F
Wet Bulb Temp.	<u>60</u> °F	<u>62</u> °F	<u>62</u> °F
Relative Humidity	<u>89</u> %	<u>90</u> %	<u>90</u> %
Ambient Pressure	<u>29.78</u> " Hg	<u></u> " Hg	<u></u> " Hg
Wind Velocity	<u>10-15</u> ft/sec	<u>3-5</u> ft/sec	<u>5-7</u> ft/sec
Overcast	<u>100</u> %	<u>100</u> %	<u>100</u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (5,000 gal)	<u>1125</u> gal	<u>72</u> °F	<u>925</u> gal	<u>73</u> °F
Low-Lead(10,000 gal)	<u>5100</u> gal	<u>72</u> °F	<u>8000</u> gal	<u>71</u> °F
Premium (10,000 gal)	<u>5050</u> gal	<u>74</u> °F	<u>7675</u> gal	<u>71</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>8:30a</u> hrs	<u>10:00a</u> hrs	
Pump 1	<u>75991</u>	<u>76118</u>	<u>127</u>
2	<u>21138</u>	<u>21138</u>	<u>0</u>
3	<u>68077</u>	<u>68105</u>	<u>28</u>
4	<u>90848</u>	<u>90972</u>	<u>124</u>
5	<u>45326</u>	<u>45463</u>	<u>137</u>
6	<u>48846</u>	<u>48860</u>	<u>14</u>
7	<u>59794</u>	<u>59955</u>	<u>161</u>
8	<u>13907</u>	<u>13946</u>	<u>39</u>
9	<u>38782</u>	<u>38782</u>	<u>0</u>
10	<u>12697</u>	<u>12697</u>	<u>0</u>
11	<u>94816</u>	<u>94816</u>	<u>0</u>
12	<u>30029</u>	<u>30053</u>	<u>24</u>



PROCESS PRODUCTS SYSTEM
UNION 76 STATION LAYOUT

Station Union 76, Zion & Waring RoadDate 6-10-74Vapor Recovery System Process Products

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:30</u> Hrs	<u>1:00</u> Hrs	<u> </u> Hrs
Dry Bulb Temp.	<u>63</u> °F	<u>76</u> °F	<u> </u> °F
Wet Bulb Temp.	<u>61</u> °F	<u>68</u> °F	<u> </u> °F
Relative Humidity	<u>89</u> %	<u>66</u> %	<u> </u> %
Ambient Pressure	<u>29.86</u> " Hg	<u> </u> " Hg	<u> </u> " Hg
Wind Velocity	<u>4-5 NW</u> ft/sec	<u>4-5 NW</u> ft/sec	<u> </u> ft/sec
Overcast	<u>100</u> %	<u>5-10</u> %	<u> </u> %

	<u>Start of Day</u>	<u>End of Day</u>
No-Lead (10,000 gal)	<u>2289</u> gal <u>74</u> °F	<u> </u> gal <u> </u> °F
Low-Lead(--- gal)	<u> </u> gal <u> </u> °F	<u> </u> gal <u> </u> °F
Premium (10,000 gal)	<u>3448</u> gal <u>76</u> °F	<u> </u> gal <u> </u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>8:35</u> hrs	<u> </u> hrs	
Pump 1	<u>70910</u>	<u> </u>	<u> </u>
2	<u>01680</u>	<u> </u>	<u> </u>
3	<u>18353</u>	<u> </u>	<u> </u>
4	<u>92699</u>	<u> </u>	<u> </u>
5	<u>40088</u>	<u> </u>	<u> </u>
6	<u>64947</u>	<u> </u>	<u> </u>
7	<u>72158</u>	<u> </u>	<u> </u>
8	<u>57693</u>	<u> </u>	<u> </u>
9	<u> </u>	<u> </u>	<u> </u>
10	<u> </u>	<u> </u>	<u> </u>
11	<u> </u>	<u> </u>	<u> </u>
12	<u> </u>	<u> </u>	<u> </u>

NOTE: No testing this day

Station Union 76, Zion & Waring Road Date 6-11-74

Vapor Recovery System Process Products

	<u>AM</u>		<u>Noon</u>		<u>PM</u>	
	<u>9:00</u>	<u>Hrs</u>	<u>12:00</u>	<u>Hrs</u>	<u>5:30</u>	<u>Hrs</u>
Dry Bulb Temp.	<u>62</u>	<u>°F</u>	<u>72</u>	<u>°F</u>	<u>70</u>	<u>°F</u>
Wet Bulb Temp.	<u>60</u>	<u>°F</u>	<u>66</u>	<u>°F</u>	<u>64</u>	<u>°F</u>
Relative Humidity	<u>89</u>	<u>%</u>	<u>73</u>	<u>%</u>	<u>72</u>	<u>%</u>
Ambient Pressure	<u>29.90</u>	<u>" Hg</u>	<u></u>	<u>" Hg</u>	<u></u>	<u>" Hg</u>
Wind Velocity	<u>2-3 SW</u>	<u>ft/sec</u>	<u>4-5 SW</u>	<u>ft/sec</u>	<u>3-4 SW</u>	<u>ft/sec</u>
Overcast	<u>100</u>	<u>%</u>	<u>75</u>	<u>%</u>	<u>0-5</u>	<u>%</u>

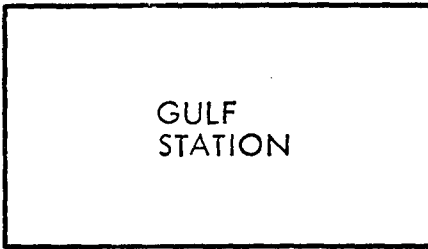
	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (10,000 gal)	<u>1468</u>	<u>gal 77 °F</u>	<u>1045</u>	<u>gal 75 °F</u>
Low-Lead(gal)	<u></u>	<u>gal °F</u>	<u></u>	<u>gal °F</u>
Premium (10,000 gal)	<u>2665</u>	<u>gal 76 °F</u>	<u>2167</u>	<u>gal 74 °F</u>

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>9:00 hrs</u>	<u>12:00 hrs</u>	
Pump 1	<u>71032*</u>	<u>71298</u>	<u>266</u>
2	<u>02037</u>	<u>02087</u>	<u>50</u>
3	<u>18580</u>	<u>18713</u>	<u>133</u>
4	<u>92931</u>	<u>93113</u>	<u>182</u>
5*	<u>40116</u>	<u>40184</u>	<u>68</u>
6	<u>65075</u>	<u>65159</u>	<u>89</u>
7	<u>72251</u>	<u>72319</u>	<u>68</u>
8	<u>57748</u>	<u>57828</u>	<u>80</u>
9	<u></u>	<u></u>	<u></u>
10	<u></u>	<u></u>	<u></u>
11	<u></u>	<u></u>	<u></u>
12	<u></u>	<u></u>	<u></u>

*Tested pump

BOUNDARY AVE

VENTS



UNIVERSITY AVE

BALANCED SYSTEM
GULF STATION LAYOUT

Station Gulf Oil, University & Boundary Date 6-12-74
 Vapor Recovery System Balanced

	<u>AM</u>		<u>Noon</u>		<u>PM</u>	
	<u>8:15</u>	<u>Hrs</u>	<u>1:15</u>	<u>Hrs</u>	<u>6:15</u>	<u>Hrs</u>
Dry Bulb Temp.	<u>61</u>	<u>°F</u>	<u>70</u>	<u>°F</u>	<u>67</u>	<u>°F</u>
Wet Bulb Temp.	<u>58</u>	<u>°F</u>	<u>65</u>	<u>°F</u>	<u>62</u>	<u>°F</u>
Relative Humidity	<u>84</u>	<u>%</u>	<u>77</u>	<u>%</u>	<u>75</u>	<u>%</u>
Ambient Pressure	<u>29.86</u>	<u>" Hg</u>	<u></u>	<u>" Hg</u>	<u>29.78</u>	<u>" Hg</u>
Wind Velocity	<u>4-5 NW</u>	<u>ft/sec</u>	<u>5+ W</u>	<u>ft/sec</u>	<u>5+ W</u>	<u>ft/sec</u>
Overcast	<u>100</u>	<u>%</u>	<u>0</u>	<u>%</u>	<u>0</u>	<u>%</u>

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (10,000 gal)	<u>9613</u>	<u>gal 78 °F</u>	<u>9680</u>	<u>gal 85 °F</u>
Low-Lead(10,000 gal)	<u>6810</u>	<u>gal 76 °F</u>	<u>9302</u>	<u>gal 83 °F</u>
Premium (10,000 gal)	<u>4306</u>	<u>gal 75 °F</u>	<u>8837</u>	<u>gal 81 °F</u>

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>9:00 hrs</u>	<u>6:30 hrs</u>	
Pump 1	<u>73647</u>	<u>73670</u>	<u>23</u>
2	<u>92069</u>	<u>92448</u>	<u>337</u>
3	<u>49284</u>	<u>49662</u>	<u>378</u>
4	<u>58751</u>	<u>58751</u>	<u>0</u>
5*	<u>21426</u>	<u>21792</u>	<u>366</u>
6	<u>15243</u>	<u>15279</u>	<u>36</u>
7	<u></u>	<u></u>	<u></u>
8	<u></u>	<u></u>	<u></u>
9	<u></u>	<u></u>	<u></u>
10	<u></u>	<u></u>	<u></u>
11	<u></u>	<u></u>	<u></u>
12	<u></u>	<u></u>	<u></u>

*Tested pump

Station Gulf, University & BoundaryDate 6-13-74Vapor Recovery System Balanced

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:30</u> Hrs	<u>12:30</u> Hrs	<u>5:30</u> Hrs
Dry Bulb Temp.	<u>62</u> °F	<u>69</u> °F	<u>68</u> °F
Wet Bulb Temp.	<u>60</u> °F	<u>65</u> °F	<u>64</u> °F
Relative Humidity	<u>89</u> %	<u>81</u> %	<u>80</u> %
Ambient Pressure	<u>30.08</u> " Hg	<u></u> " Hg	<u></u> " Hg
Wind Velocity	<u>2-3 NW</u> ft/sec	<u>5+ NW</u> ft/sec	<u>5+ W</u> ft/sec
Overcast	<u>100</u> %	<u>0</u> %	<u>0</u> %

	<u>Start of Day</u>	<u>End of Day</u>
	<u>9680</u> gal <u>75</u> °F	<u>9680</u> gal <u>82</u> °F
No-Lead (10,000 gal)		
Low-Lead(10,000 gal)	<u>9125</u> gal <u>72</u> °F	<u>7000</u> gal <u>81</u> °F
Premium (10,000 gal)	<u>8527</u> gal <u>75</u> °F	<u>8085</u> gal <u>79</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:30</u> hrs	<u>5:30</u> hrs	
Pump 1	<u>73689</u>	<u>73691</u>	<u>2</u>
2 *	<u>92720</u>	<u>93193</u>	<u>473</u>
3	<u>49934</u>	<u>50175</u>	<u>241</u>
4	<u>58754</u>	<u>58777</u>	<u>23</u>
5 *	<u>21931</u>	<u>22390</u>	<u>459</u>
6	<u>15330</u>	<u>15553</u>	<u>223</u>
7	<u></u>	<u></u>	<u></u>
8	<u></u>	<u></u>	<u></u>
9	<u></u>	<u></u>	<u></u>
10	<u></u>	<u></u>	<u></u>
11	<u></u>	<u></u>	<u></u>
12	<u></u>	<u></u>	<u></u>

*Tested pump

Station Gulf, University & BoundaryDate 6-14-74Vapor Recovery System Balanced

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:00</u> Hrs	<u>2:00</u> Hrs	<u>5:00</u> Hrs
Dry Bulb Temp.	<u>63</u> °F	<u>78</u> °F	<u>77</u> °F
Wet Bulb Temp.	<u>61</u> °F	<u>70</u> °F	<u>70</u> °F
Relative Humidity	<u>89</u> %	<u>67</u> %	<u>71</u> %
Ambient Pressure	<u>29.88</u> " Hg	<u></u> " Hg	<u></u> " Hg
Wind Velocity	<u>3-4 NE</u> ft/sec	<u>4-5 NW</u> ft/sec	<u>1+ NW</u> ft/sec
Overcast	<u>100</u> %	<u>0</u> %	<u>0</u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (10,000 gal)	<u>9680</u> gal	<u>79</u> °F	<u>9613</u> gal	<u>86</u> °F
Low-Lead(10,000 gal)	<u>7000</u> gal	<u>75</u> °F	<u>6746</u> gal	<u>86</u> °F
Premium (10,000 gal)	<u>8085</u> gal	<u>74</u> °F	<u>7250</u> gal	<u>84</u> °F

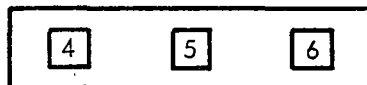
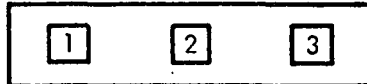
	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:00</u> hrs	<u>5:00</u> hrs	
Pump 1	<u>73709</u>	<u>73719</u>	<u>10</u>
2*	<u>93388</u>	<u>93934</u>	<u>546</u>
3	<u>50381</u>	<u>50558</u>	<u>177</u>
4	<u>58784</u>	<u>58793</u>	<u>9</u>
5*	<u>22472</u>	<u>22914</u>	<u>442</u>
6	<u>15704</u>	<u>15970</u>	<u>266</u>
7	<u></u>	<u></u>	<u></u>
8	<u></u>	<u></u>	<u></u>
9	<u></u>	<u></u>	<u></u>
10	<u></u>	<u></u>	<u></u>
11	<u></u>	<u></u>	<u></u>
12	<u></u>	<u></u>	<u></u>

*Tested pump

LAKE MURRAY BLVD

VENTS
○○○

STANDARD
STATION



BALTIMORE AVE

BALANCED STATION
STANDARD STATION LAYOUT

A-11

Station Standard, Baltimore & Lake Murray Date 6-17-74
 Vapor Recovery System Balanced

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:30</u> Hrs	<u>1:15</u> Hrs	<u>5:30</u> Hrs
Dry Bulb Temp.	<u>64</u> °F	<u>75</u> °F	<u>74</u> °F
Wet Bulb Temp.	<u>59</u> °F	<u>65</u> °F	<u>64</u> °F
Relative Humidity	<u>74</u> %	<u>58</u> %	<u>58</u> %
Ambient Pressure	<u>29.49</u> " Hg	<u> </u> " Hg	<u> </u> " Hg
Wind Velocity	<u>1-1.5</u> NW ft/sec	<u>5+ NW</u> ft/sec	<u>5+ W</u> ft/sec
Overcast	<u> </u> %	<u> </u> %	<u> </u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (8,000 gal)	<u>2600</u> gal	<u>70</u> °F	<u>2200</u> gal	<u>75</u> °F
Low-Lead(8,000 gal)	<u>850</u> gal	<u>73</u> °F	<u>825</u> gal	<u>73</u> °F
Premium (8,000 gal)	<u>2950</u> gal	<u>72</u> °F	<u>2675</u> gal	<u>73</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>8:00</u> hrs	<u>5:45</u> hrs	
Pump 1 *	<u>00557</u>	<u>00693</u>	<u>136</u>
2	<u>99790</u>	<u>99790</u>	<u>0</u>
3	<u>00785</u>	<u>00863</u>	<u>78</u>
4 *	<u>00283</u>	<u>00497</u>	<u>214</u>
5	<u>99710</u>	<u>99710</u>	<u>0</u>
6	<u>00037</u>	<u>00177</u>	<u>140</u>
7	<u>00316</u>	<u>00351</u>	<u>35</u>
8	<u>99740</u>	<u>99759</u>	<u>19</u>
9	<u>Closed</u>	<u>Closed</u>	<u>0</u>
10	<u> </u>	<u> </u>	<u> </u>
11	<u> </u>	<u> </u>	<u> </u>
12	<u> </u>	<u> </u>	<u> </u>

*Tested pump

Station Standard, Baltimore & Lake Murrarv Date 6-18-74

Vapor Recovery System Balanced

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:15</u> Hrs	<u>11:45</u> Hrs	<u>3:30</u> Hrs
Dry Bulb Temp.	<u>61</u> °F	<u>76</u> °F	<u>78</u> °F
Wet Bulb Temp.	<u>58</u> °F	<u>65</u> °F	<u>57</u> °F
Relative Humidity	<u>84</u> %	<u>55</u> %	<u>53</u> %
Ambient Pressure	<u>29.49</u> " Hg	<u> </u> " Hg	<u> </u> " Hg
Wind Velocity	<u>3-5 NE</u> ft/sec	<u>5+ W</u> ft/sec	<u>5+</u> ft/sec
Overcast	<u>10</u> %	<u>0</u> %	<u>0</u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (8,000 gal)	<u>2050</u> gal	<u>71</u> °F	<u>6275</u> gal	<u>76</u> °F
Low-Lead(8,000 gal)	<u>900</u> gal	<u>73</u> °F	<u>825</u> gal	<u>72</u> °F
Premium (8,000 gal)	<u>2575</u> gal	<u>72</u> °F	<u>5900</u> gal	<u>74</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:30</u> hrs	<u>3:30</u> hrs	
Pump 1*	<u>00830</u>	<u>00884</u>	<u>54</u>
2	<u>99790</u>	<u>99792</u>	<u>2</u>
3	<u>00946</u>	<u>01030</u>	<u>84</u>
4*	<u>00560</u>	<u>00764</u>	<u>204</u>
5	<u>99710</u>	<u>99710</u>	<u>0</u>
6	<u>00217</u>	<u>00217</u>	<u>0</u>
7	<u>00378</u>	<u>00400</u>	<u>22</u>
8	<u>99761</u>	<u>99761</u>	<u>0</u>
9	<u>Closed</u>	<u>Closed</u>	<u> </u>
10	<u> </u>	<u> </u>	<u> </u>
11	<u> </u>	<u> </u>	<u> </u>
12	<u> </u>	<u> </u>	<u> </u>

*Tested pump

Station Standard, Baltimore & Lake Murray Date 6-19-74

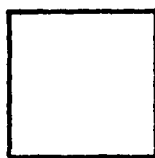
Vapor Recovery System Balanced

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>5:30 Hrs</u>	<u>12:00 Hrs</u>	<u>3:00 Hrs</u>
Dry Bulb Temp.	<u>55 °F</u>	<u>74 °F</u>	<u>81 °F</u>
Wet Bulb Temp.	<u>54 °F</u>	<u>64 °F</u>	<u>67 °F</u>
Relative Humidity	<u>94 %</u>	<u>58 %</u>	<u>47 %</u>
Ambient Pressure	<u>29.57 " Hg</u>	<u>" Hg</u>	<u>" Hg</u>
Wind Velocity	<u>0-1 NW ft/sec</u>	<u>5+ W ft/sec</u>	<u>5+ ft/sec</u>
Overcast	<u>0 %</u>	<u>0 %</u>	<u>0 %</u>

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (8,000 gal)	<u>6150 gal</u>	<u>67 °F</u>	<u>5800 gal</u>	<u>73 °F</u>
Low-Lead(8,000 gal)	<u>825 gal</u>	<u>67 °F</u>	<u>825 gal</u>	<u>71 °F</u>
Premium (8,000 gal)	<u>5600 gal</u>	<u>66 °F</u>	<u>5300 gal</u>	<u>72 °F</u>

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>5:30 hrs</u>	<u>3:30 hrs</u>	
Pump 1*	<u>00949</u>	<u>01086</u>	<u>137</u>
2	<u>99792</u>	<u>99792</u>	<u>0</u>
3	<u>01201</u>	<u>01296</u>	<u>95</u>
4*	<u>00787</u>	<u>01108</u>	<u>321</u>
5	<u>99710</u>	<u>99710</u>	<u>0</u>
6	<u>00228</u>	<u>00360</u>	<u>132</u>
7	<u>00489</u>	<u>00641</u>	<u>152</u>
8	<u>99761</u>	<u>99787</u>	<u>26</u>
9	<u>Closed</u>	<u>Closed</u>	<u>0</u>
10	<u></u>	<u></u>	<u></u>
11	<u></u>	<u></u>	<u></u>
12	<u></u>	<u></u>	<u></u>

*Tested pump



VAPOX 3000
UNIT



SHAMBRAZIL
STATION



FLETCHER DRIVE

BALTIMORE AVE

ENVIRONICS SYSTEM
TEXACO STATION LAYOUT

Station Texaco, Baltimore & Fletcher Date 6-20-74

Vapor Recovery System Environics

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:30</u> Hrs	<u>12:45</u> Hrs	<u>6:00</u> Hrs
Dry Bulb Temp.	<u>66</u> °F	<u>82</u> °F	<u>78</u> °F
Wet Bulb Temp.	<u>60</u> °F	<u>69</u> °F	<u>68</u> °F
Relative Humidity	<u>66</u> %	<u>51</u> %	<u>60</u> %
Ambient Pressure	<u>29.58</u> " Hg	<u> </u> " Hg	<u> </u> " Hg
Wind Velocity	<u>1-2 E</u> ft/sec	<u>5+ W</u> ft/sec	<u>5+ W</u> ft/sec
Overcast	<u>0</u> %	<u>0</u> %	<u>0</u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (8,000 gal)	<u>4430</u> gal	<u>72</u> °F	<u>3779</u> gal	<u>75</u> °F
Low-Lead(8,000 gal)	<u>4646</u> gal	<u>72</u> °F	<u>4646</u> gal	<u>72</u> °F
Premium (8,000 gal)	<u>2501</u> gal	<u>73</u> °F	<u>1798</u> gal	<u>74</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:45</u> hrs	<u>6:00</u> hrs	
Pump 1*	<u>36734</u>	<u>36888</u>	<u>159</u>
2	<u>44893</u>	<u>44972</u>	<u>79</u>
3	<u>04070</u>	<u>04070</u>	<u>0</u>
4	<u>99167</u>	<u>99244</u>	<u>77</u>
5	<u>39526</u>	<u>39727</u>	<u>201</u>
6*	<u>42961</u>	<u>43422</u>	<u>461</u>
7	<u>03963</u>	<u>03970</u>	<u>7</u>
8	<u>44748</u>	<u>45158</u>	<u>410</u>
9	<u> </u>	<u> </u>	<u> </u>
10	<u> </u>	<u> </u>	<u> </u>
11	<u> </u>	<u> </u>	<u> </u>
12	<u> </u>	<u> </u>	<u> </u>

*Tested pump

Station Texaco, Baltimore & Fletcher Date 6-21-74
 Vapor Recovery System Environics

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:20 Hrs</u>	<u>12:00 Hrs</u>	<u>3:00 Hrs</u>
Dry Bulb Temp.	<u>60 °F</u>	<u>83 °F</u>	<u>81 °F</u>
Wet Bulb Temp.	<u>59 °F</u>	<u>70 °F</u>	<u>69 °F</u>
Relative Humidity	<u>94 %</u>	<u>51 %</u>	<u>54 %</u>
Ambient Pressure	<u>29.59 " Hg</u>	<u>" Hg</u>	<u>" Hg</u>
Wind Velocity	<u>0-1 NE ft/sec</u>	<u>5+ SW ft/sec</u>	<u>5+ SW ft/sec</u>
Overcast	<u>100 %</u>	<u>0 %</u>	<u>0 %</u>

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (8,000 gal)	<u>4646 gal</u>	<u>68 °F</u>	<u>4646 gal</u>	<u>72 °F</u>
Low-Lead(8,000 gal)	<u>3455 gal</u>	<u>71 °F</u>	<u>6947 gal</u>	<u>74 °F</u>
Premium (8,000 gal)	<u>1607 gal</u>	<u>70 °F</u>	<u>5075 gal</u>	<u>75 °F</u>

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:30 hrs</u>	<u>3:00 hrs</u>	
Pump 1	<u>36947</u>	<u>37046</u>	<u>99</u>
2	<u>45007</u>	<u>45119</u>	<u>112</u>
3	<u>04071</u>	<u>04070</u>	<u>1</u>
4	<u>99302</u>	<u>99520</u>	<u>218</u>
5	<u>39803</u>	<u>39929</u>	<u>126</u>
6	<u>43491</u>	<u>43723</u>	<u>232</u>
7	<u>03975</u>	<u>03977</u>	<u>2</u>
8	<u>05212</u>	<u>45482</u>	<u>270</u>
9	<u></u>	<u></u>	<u></u>
10	<u></u>	<u></u>	<u></u>
11	<u></u>	<u></u>	<u></u>
12	<u></u>	<u></u>	<u></u>

Station Union 76, Zion & Waring Date 6-24-74

Vapor Recovery System Process Products

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:30</u> Hrs	<u>12:00</u> Hrs	<u>5:00</u> Hrs
Dry Bulb Temp.	<u>66</u> °F	<u>79</u> °F	<u>79</u> °F
Wet Bulb Temp.	<u>65</u> °F	<u>72</u> °F	<u>69</u> °F
Relative Humidity	<u>95</u> %	<u>71</u> %	<u>60</u> %
Ambient Pressure	<u>29.91</u> " Hg	<u> </u> " Hg	<u> </u> " Hg
Wind Velocity	<u>3-5 SE</u> ft/sec	<u>3-5+ W</u> ft/sec	<u>5+ W</u> ft/sec
Overcast	<u>10</u> %	<u>0</u> %	<u>0</u> %

	<u>Start of Day</u>	<u>End of Day</u>
No-Lead (10,000 gal)	<u>2793</u> gal <u>75</u> °F	<u>2665</u> gal <u>75</u> °F
Low-Lead(<u> </u> gal)	<u> </u> gal <u> </u> °F	<u> </u> gal <u> </u> °F
Premium (10,000 gal)	<u>4397</u> gal <u>72</u> °F	<u>3987</u> gal <u>76</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:30</u> hrs	<u>5:15</u> hrs	
Pump 1	<u>73552</u>	<u>73669</u>	<u>117</u>
2	<u>04819</u>	<u>04940</u>	<u>121</u>
3	<u>21111</u>	<u>21452</u>	<u>341</u>
4	<u>95342</u>	<u>95574</u>	<u>232</u>
5*	<u>40869</u>	<u>41111</u>	<u>242</u>
6	<u>66661</u>	<u>66691</u>	<u>30</u>
7	<u>73343</u>	<u>73370</u>	<u>27</u>
8	<u>58853</u>	<u>58897</u>	<u>44</u>
9	<u> </u>	<u> </u>	<u> </u>
10	<u> </u>	<u> </u>	<u> </u>
11	<u> </u>	<u> </u>	<u> </u>
12	<u> </u>	<u> </u>	<u> </u>

*Tested pump

Station Union 76, Zion & Waring Date 6-25-74

Vapor Recovery System Process Products

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>7:30</u> Hrs	<u>12:00</u> Hrs	<u>3:00</u> Hrs
Dry Bulb Temp.	<u>65</u> °F	<u>78</u> °F	<u>83</u> °F
Wet Bulb Temp.	<u>62</u> °F	<u>69</u> °F	<u>71</u> °F
Relative Humidity	<u>85</u> %	<u>63</u> %	<u>55</u> %
Ambient Pressure	<u>29.94</u> " Hg	<u></u> " Hg	<u></u> " Hg
Wind Velocity	<u>0-1 NW</u> ft/sec	<u>2-3 W</u> ft/sec	<u>5+ W</u> ft/sec
Overcast	<u>90</u> %	<u>0</u> %	<u>0</u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (10,000 gal)	<u>1867</u> gal	<u>74</u> °F	<u>5707</u> gal	<u>75</u> °F
Low-Lead(--- gal)	<u></u> gal	<u></u> °F	<u></u> gal	<u></u> °F
Premium (10,000 gal)	<u>3448</u> gal	<u>74</u> °F	<u>8325</u> gal	<u>74</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>7:30</u> hrs	<u>3:00</u> hrs	
Pump 1	<u>73669</u>	<u>73827</u>	<u>158</u>
2	<u>04940</u>	<u>05175</u>	<u>235</u>
3	<u>21452</u>	<u>21615</u>	<u>163</u>
4	<u>95574</u>	<u>95625</u>	<u>51</u>
5	<u>41111</u>	<u>41164</u>	<u>53</u>
6	<u>66691</u>	<u>66773</u>	<u>82</u>
7	<u>73370</u>	<u>73458</u>	<u>88</u>
8	<u>58897</u>	<u>58930</u>	<u>33</u>
9	<u></u>	<u></u>	<u></u>
10	<u></u>	<u></u>	<u></u>
11	<u></u>	<u></u>	<u></u>
12	<u></u>	<u></u>	<u></u>

Station Standard, Carmel Valley Rd. & I5Date 6-26-74Vapor Recovery System Intermark

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>9:30</u> Hrs	<u>12:45</u> Hrs	<u>3:15</u> Hrs
Dry Bulb Temp.	<u>72</u> °F	<u>77</u> °F	<u>75</u> °F
Wet Bulb Temp.	<u>67</u> °F	<u>68</u> °F	<u>69</u> °F
Relative Humidity	<u>77</u> %	<u>63</u> %	<u>74</u> %
Ambient Pressure	<u>29.86</u> " Hg	<u></u> " Hg	<u></u> " Hg
Wind Velocity	<u>5+ W</u> ft/sec	<u>5+ W</u> ft/sec	<u>5+ W</u> ft/sec
Overcast	<u></u> %	<u></u> %	<u></u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (5,000 gal)	<u>3700</u> gal	<u>72</u> °F	<u>3500</u> gal	<u>72</u> °F
Low-Lead(10,000 gal)	<u>4650</u> gal	<u>72</u> °F	<u>3650</u> gal	<u>72</u> °F
Premium (10,000 gal)	<u>8600</u> gal	<u>70</u> °F	<u>7975</u> gal	<u>72</u> °F

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>9:30</u> hrs	<u>3:30</u> hrs	
Pump 1	<u>91502</u>	<u>91775</u>	<u>273</u>
2	<u>22124</u>	<u>22166</u>	<u>42</u>
3	<u>78304</u>	<u>78532</u>	<u>228</u>
4	<u>01657</u>	<u>01880</u>	<u>223</u>
5	<u>65246</u>	<u>65504</u>	<u>258</u>
6	<u>50495</u>	<u>50495</u>	<u>0</u>
7	<u>74359</u>	<u>74638</u>	<u>279</u>
8	<u>26483</u>	<u>26783</u>	<u>300</u>
9	<u>Closed</u>	<u>Closed</u>	<u>0</u>
10	<u>12751</u>	<u>12751</u>	<u>0</u>
11	<u>95139</u>	<u>95139</u>	<u>0</u>
12	<u>30484</u>	<u>30484</u>	<u>0</u>

Station Standard, Carmel Valley Rd. & I5 Date 6-26-74
 Vapor Recovery System Intermark

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>9:30 Hrs</u>	<u>12:45 Hrs</u>	<u>3:15 Hrs</u>
Dry Bulb Temp.	<u>72 °F</u>	<u>77 °F</u>	<u>75 °F</u>
Wet Bulb Temp.	<u>67 °F</u>	<u>68 °F</u>	<u>69 °F</u>
Relative Humidity	<u>77 %</u>	<u>63 %</u>	<u>74 %</u>
Ambient Pressure	<u>29.86 " Hg</u>	<u>" Hg</u>	<u>" Hg</u>
Wind Velocity	<u>5+ W ft/sec</u>	<u>5+ W ft/sec</u>	<u>5+ W ft/sec</u>
Overcast	<u>%</u>	<u>%</u>	<u>%</u>

	<u>Start of Day</u>	<u>End of Day</u>
No-Lead (5,000 gal)	<u>3700 gal 72 °F</u>	<u>3500 gal 72 °F</u>
Low-Lead(10,000 gal)	<u>4650 gal 72 °F</u>	<u>3650 gal 72 °F</u>
Premium (10,000 gal)	<u>8600 gal 70 °F</u>	<u>7975 gal 72 °F</u>

	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>9:30 hrs</u>	<u>3:30 hrs</u>	
Pump 1	<u>91502</u>	<u>91775</u>	<u>273</u>
2	<u>22124</u>	<u>22166</u>	<u>42</u>
3	<u>78304</u>	<u>78532</u>	<u>228</u>
4	<u>01657</u>	<u>01880</u>	<u>223</u>
5	<u>65246</u>	<u>65504</u>	<u>258</u>
6	<u>50495</u>	<u>50495</u>	<u>0</u>
7	<u>74359</u>	<u>74638</u>	<u>279</u>
8	<u>26483</u>	<u>26783</u>	<u>300</u>
9	<u>Closed</u>	<u>Closed</u>	<u>0</u>
10	<u>12751</u>	<u>12751</u>	<u>0</u>
11	<u>95139</u>	<u>95139</u>	<u>0</u>
12	<u>30484</u>	<u>30484</u>	<u>0</u>

Station Standard, Carmel Valley Rd. & I5 Date 6-26-74
 Vapor Recovery System Intermark

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	<u>9:30</u> Hrs	<u>12:45</u> Hrs	<u>3:15</u> Hrs
Dry Bulb Temp.	<u>72</u> °F	<u>77</u> °F	<u>75</u> °F
Wet Bulb Temp.	<u>67</u> °F	<u>68</u> °F	<u>69</u> °F
Relative Humidity	<u>77</u> %	<u>63</u> %	<u>74</u> %
Ambient Pressure	<u>29.86</u> " Hg	<u> </u> " Hg	<u> </u> " Hg
Wind Velocity	<u>5+ W</u> ft/sec	<u>5+ W</u> ft/sec	<u>5+ W</u> ft/sec
Overcast	<u> </u> %	<u> </u> %	<u> </u> %

	<u>Start of Day</u>		<u>End of Day</u>	
No-Lead (5,000 gal)	<u>3700</u> gal	<u>72</u> °F	<u>3500</u> gal	<u>72</u> °F
Low-Lead(10,000 gal)	<u>4650</u> gal	<u>72</u> °F	<u>3650</u> gal	<u>72</u> °F
Premium (10,000 gal)	<u>8600</u> gal	<u>70</u> °F	<u>7975</u> gal	<u>72</u> °F

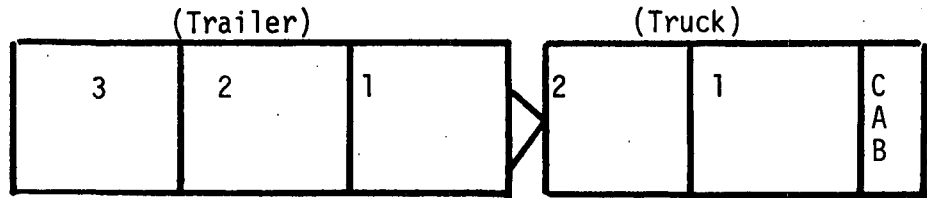
	<u>Initial</u>	<u>Final</u>	<u>Gallons Dispensed</u>
	<u>9:30</u> hrs	<u>3:30</u> hrs	
Pump 1	<u>91502</u>	<u>91775</u>	<u>273</u>
2	<u>22124</u>	<u>22166</u>	<u>42</u>
3	<u>78304</u>	<u>78532</u>	<u>228</u>
4	<u>01657</u>	<u>01880</u>	<u>223</u>
5	<u>65246</u>	<u>65504</u>	<u>258</u>
6	<u>50495</u>	<u>50495</u>	<u>0</u>
7	<u>74359</u>	<u>74638</u>	<u>279</u>
8	<u>26483</u>	<u>26783</u>	<u>300</u>
9	<u>Closed</u>	<u>Closed</u>	<u>0</u>
10	<u>12751</u>	<u>12751</u>	<u>0</u>
11	<u>95139</u>	<u>95139</u>	<u>0</u>
12	<u>30484</u>	<u>30484</u>	<u>0</u>

APPENDIX B
BULK DROP DATA

BULK DROP DATA

Station Standard (Intermark Unit) Date 6/7

Truck Configuration



Loading

Grade:	<u>L.L.</u>	<u>L.L.</u>	<u>L.L.</u>	<u>Sup.</u>	<u>Sup.</u>
Gallons Fill:	<u>2100</u>	<u>890</u>	<u>1690</u>	<u>1865</u>	<u>2140</u>
Explosimeter:	<u>Small spike to 1.8</u>	<u>0</u>	<u><.2</u>	<u>0</u>	<u>0</u>
Loading Time:	<u>(Approx. 600gpm)</u>				
Temperature:	<u>70</u>	<u>70</u>	<u>70</u>	<u>70</u>	<u>70</u>
RVP:	<u>8.9</u>				

Drop

Sequence:	<u>1</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>1</u>
Explosimeter:	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Drop Time:	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Avg. Truck Press:	<u>12.5 to 14.5 inches H₂O</u>				
Final Truck Press:	<u>2.5 inches H₂O</u>				

Tank

Grade	Capacity (gal)	Initial		Final		RVP
		Volume (gal)	Temp (°F)	Volume (gal)	Temp (°F)	
Premium	<u>10,000</u>	<u>4,700</u>	<u>74</u>	<u>8,500</u>	<u>72</u>	<u>-</u>
Regular	<u>10,000</u>	<u>4,675</u>	<u>72</u>	<u>9,000</u>	<u>72</u>	<u>-</u>
No-Lead	<u>5,000</u>	<u>1,125</u>	<u>72</u>	<u>1,125</u>	<u>-</u>	<u>-</u>

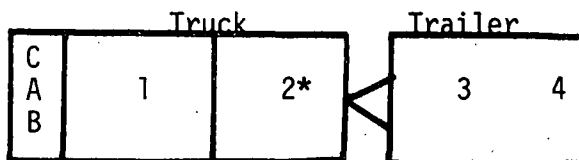
Start Truck Loading:	<u>0940</u>
Complete Truck Loading:	<u>1000</u>
Depart from Terminal:	<u>1005</u>
Arrive at Station:	<u>1035</u>
Start Bulk Drop:	<u>1100</u>
Complete Bulk Drop:	<u>1120</u>

BULK DROP DATA

Station Gulf (Balanced System)

Date 6/12

Truck Configuration



Loading

Grade:	Prem.	Prem.	Regular	Regular	
Gallons Fill:	2500	1000	1650	3100	
Explosimeter:	0	Slight leak	0	0	
Loading Time:	4:00	1:30	3:00	5:20	
Temperature:	72	72	71	71	
RV:			8.1		

Drop

Sequence:	1	1	1	1	
Explosimeter:	0	0	0	0	
Drop Time:	8:15	3:05	-	-	
Avg. Truck Press:	Approx. 1.0 inches H ₂ O				
Final Truck Press:	0	0	0	0	0

Tank

Grade	Capacity (gal)	Initial		Final		RVP
		Volume (gal)	Temp (°F)	Volume (gal)	Temp (°F)	
Premium	9,940	6,746	77	9,302	77	-
Regular	9,940	4,042	75	9,925	76	8.1
No-Lead	-	-	-	-	-	-

Start Truck Loading:	0950
Complete Truck Loading:	1015
Depart from Terminal:	1020
Arrive at Station:	1200
Start Bulk Drop:	1220
Complete Bulk Drop:	1240

* Note: Premium grade dropped into regular grade underground tank since premium tank was filled.

BULK DROP DATA

Station Standard (Balanced System)

Date 6/18

Truck Configuration

C					
A					
B	1	2	3	4	5

Loading

Grade:	<u>Supreme</u>	<u>Supreme</u>	<u>Lo-Lead</u>	<u>Lo-Lead</u>	<u>Lo-Lead</u>
Gallons Fill:	<u>2515</u>	<u>990</u>	<u>835</u>	<u>1715</u>	<u>2115</u>
Explosimeter:	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Loading Time:	<u>4:40</u>	<u>1:45</u>	<u>1:30</u>	<u>3:30</u>	<u>4:00</u>
Temperature:	<u>72</u>	<u>72</u>	<u>73</u>	<u>73</u>	<u>73</u>
RVP:			<u>9.1</u>		

Drop

Sequence:	<u>1</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>3</u>
Explosimeter:	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Drop Time:	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Avg. Truck Press:	<u>Start: -2 to -3" H₂O</u>		<u>End: -1/2 to -1" H₂O</u>		
Final Truck Press:	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Tank

<u>Grade</u>	<u>Capacity</u> (gal)	<u>Initial</u>		<u>Final</u>		<u>RVP</u>
		<u>Volume</u> (gal)	<u>Temp</u> (°F)	<u>Volume</u> (gal)	<u>Temp</u> (°F)	
Premium	<u>8,000</u>	<u>2,500</u>	<u>72</u>	<u>5,975</u>	<u>78</u>	<u>5</u>
Regular	<u>8,000</u>	<u>1,900</u>	<u>71</u>	<u>6,425</u>	<u>81</u>	<u>8.9</u>
No-Lead	<u>8,000</u>	<u>900</u>	<u>73</u>	<u>-</u>	<u>-</u>	<u>5</u>

Start Truck Loading:	<u>0915</u>
Complete Truck Loading:	<u>0930</u>
Depart from Terminal:	<u>0945</u>
Arrive at Station:	<u>1010</u>
Start Bulk Drop:	<u>1030</u>
Complete Bulk Drop:	<u>1040</u>

BULK DROP DATA

Station Texaco (Enviro-nics System) Date 6/21

Truck Configuration

C A B	1	2	3	4
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Loading

Grade:	<u>Premium</u>	<u>Premium</u>	<u>Lo-Lead</u>	<u>Lo-Lead</u>	
Gallons Fill:	<u>2400</u>	<u>1500</u>	<u>1500</u>	<u>2400</u>	
Explosimeter:	<u>.6 to 1.0</u>	<u>.2 puffs</u>	<u>.5 to 1.0</u>	<u>1.0+</u>	
Loading Time:	<u>3:50</u>	<u>2:30</u>	<u>2:30</u>	<u>3:50</u>	
Temperature:	<u>71</u>	<u>71</u>	<u>72</u>	<u>73</u>	
			<u>8.3</u>		

Drop

Sequence:	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	
Explosimeter:	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
Drop Time:	<u>5:15</u>	<u>3:45</u>	<u>4:08</u>	<u>6:50</u>	
Avg. Truck Press:	<u>Varying from -3: to -5" H₂O</u>				
Final Truck Press:	<u>0</u>	<u>0</u>	<u>0</u>	<u>+0.1</u>	

Tank

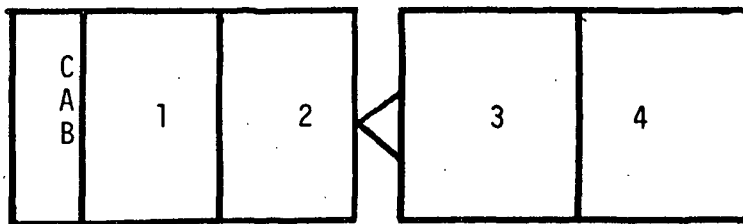
<u>Grade</u>	<u>Capacity</u> (gal)	<u>Initial</u>		<u>Final</u>		<u>RVP</u>
		<u>Volume</u> (gal)	<u>Temp</u> (°F)	<u>Volume</u> (gal)	<u>Temp</u> (°F)	
Premium	<u>8,000</u>	<u>1,600</u>	<u>74</u>	<u>5,080</u>	<u>73</u>	<u>-</u>
Regular	<u>8,000</u>	<u>3,455</u>	<u>72</u>	<u>6,960</u>	<u>72</u>	<u>-</u>
No-Lead	<u>8,000</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>

Start Truck Loading:	<u>0815</u>
Complete Truck Loading:	<u>0830</u>
Depart from Terminal:	<u>0835</u>
Arrive at Station:	<u>0845</u>
Start Bulk Drop:	<u>0930</u>
Complete Bulk Drop:	<u>1005</u>

BULK DROP DATA

Station Union 76 (Process Products System) Date 6/25

Truck Configuration



Loading

Grade:	Premium	Unleaded	Unleaded	Premium	
Gallons Fill:	2400	2000	2000	2400	
Explosimeter:	0	*	*	.9	
Loading Time:	3:30	*	*	3:30	
Temperature:	74	*	*	74	

Drop

Sequence:	1	2	1	2	
Explosimeter:	0	.7	1.0	0	
Drop Time:	5:15	4:05	4:15	5:30	
Avg. Truck Press:	← 2 to 4 " H ₂ O →				
Final Truck Press:	1.5"	1.5"	1.5"	1.5"	

Tank

Grade	Capacity (gal)	Initial		Final		RVP
		Volume (gal)	Temp (°F)	Volume (gal)	Temp (°F)	
Premium	10,000	3,250	75	8,384	78	-
Regular	10,000	1,580	74	6,054	78	8.6
No-Lead	-	-	-	-	-	-

Start Truck Loading:	0900
Complete Truck Loading:	0910
Depart from Terminal:	0915
Arrive at Station:	1000
Start Bulk Drop:	1015
Complete Bulk Drop:	1025

* Note: Unleaded product delivered from Los Angeles.
RVP Sample from fill tube after drop was 7.9

APPENDIX C
VEHICLE REFUELING DATA

Index

Appendix C-1	Field Data, Page 1
Appendix C-2	Field Data, Page 2
Appendix C-3	Performance Calculations
Appendix C-4	Vapor Collection Ratios
Appendix C-5	Calculation Methods

APPENDIX C-1
FIELD DATA, PAGE 1 OF 2

STATION: STANDARD		PROCESS: INTERMARK		LOCATION: CARMEL VALLEY + IS						DATE: 6/ 6/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK	VEH. TANK	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
932HWN	0840	CALIF	FORD	S/W	73	FREE 5	65	1.6 1.5		NO	16.5	2:30	3:00
080EAT	0925	CAL	VOLKS	SW	69	LOCAL 3				NO	7.4	0:41	4:30
242CTX	0955	CAL	CHEV.	VEGA	71	LOCAL 1 1/2	66	0		NO	7.2	0:42	0:45
13584R	1030	---	FORD	COURIER.	74	FREE 130	60	.9 .8		NO	10.	0:59	1:30
E830974	1038	CAL.	DODGE	POLARA	73	FREE 5	86	0 N/A			13.9	1:02	1:32
55865F	1055	CAL.	FORD	PICKUP	70	BOTH 140	72	N/A			17.4	1:40	1:42
874FLS	1115	CAL	CHEV.	S.W.	69	FREE 100	74	N/A			18.7	1:41	1:48
C9809	1125	NEVAD	MERCURY	S.W	72	FREE 85	94	N/A			6.7	0:50	0:51
059KFQ	1135	CAL	AMC	JAVLIN	74	FREE 100	90	-5			12.5	1:40	1:50
VCL446	1150	CAL.	V.W.	BUS	67	FREE 10	64				8.5	1:18	1:18
YYG563	1205	CAL	FORD	MUSTANG	69	FREE 4	74				17.3	2:35	2:37
GQP810	1215	CAL	VOLKS	BUS	62	LOCAL 1	70				8.3	1:45	1:45
60969	1225	CAL	FORD	MAVERICK	73	FREE 12	89				13.5	2:01	2:01
92402X	1230	CAL	MERCURY	S.W.	72	FREE 20	81				13.	1:53	1:55

STATION: STANDARD

PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + I5

DATE: 6/ 6/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
96695E	1245	CAL	FORD	PICK-UP	69	FREE 200	78				14.7	1:17	1:20
XYV086	1305	CAL.	CHRYSLER	NEWYORKE	68	LOCAL 6	67				16.1	1:25	1:27
R27816	1320	CAL	CHEV	PICKUP	67	FREE 15	72				12.4	1:10	1:11
TUCKIE	1335	CAL.	FORD	PINTO	74	LOCAL 7	80				3.5	0:20	0:20
950DVE	1350	CAL	MERCURY	MARQUIS	71	LOCAL 100	88				9.4	1:22	1:22
VWA636	1400	CAL	V.W.	BUS	68	LOCAL 10	78				3.5	0:36	0:36
026BHA	1410	CAL	FORD	FALCON	69	FREE 40	86				12.3	1:50	1:50
248ACV	1415	CAL	V.W.	BUG	70	LOCAL 12	73				6.2	0:55	0:55
588YHU	1430	B.C.	CHEV.	2 TON TR	56	FREE 40	74				13.4	1:16	1:20
029ESQ	1540	CAL	V.W.	SEDAN	70	LOCAL 1	75				8.3	0:47	0:47
2LX232	1450	----	-----	-----	----	-----	74				8.8	1:23	1:23
838GOA	1455	CAL	FORD	MUSTANG	72	FREE 30	87				14.1	1:09	1:20
830HPA	1505	CAL.	FORD	FAIRLANE	69	FREE 3	73				8.9	1:18	1:18
651FVR	1510	CAL	FORD	PINTO WA	72	LOCAL 2 1/2	76		-3		8.0	1:10	1:10

STATION: STANDARD PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + I5

DATE: 6/ 6/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
829360	1520	CAL	PLYMOTH	SATALITE	73	FREE	130	87			15.1	1:20	1:23
902DBT	1530	CAL	BUICK	LASABRE	71	FREE	75	81	+3/41/2		13.9	1:15	1:22
73438M	1500	CAL	GMC	PICK-UP	73	LOCAL	1	73			11.4	1:01	1:07
18354V	1545	CAL	DATSUN	PICK-UP	72	FREE	30	82		NO	8.1	1:10	1:11
HMX668	1550	CAL	V.W.	BUG	65	FREE	15	71			8.7	1:49	1:54
XDU752	1600	CAL	PLYMOUTH	VALIANT	68	FREE	50	84			14.5	1:18	1:20
296KBI	1605	CA.	FORD	TORINO	74	BOTH	50	90	2.8 2.3		19.2	2:48	2:50
SKE220	1620	CAL	MERCURY	COMET	66	LOCAL	1	76			8.6	1:14	1:20
4152	1630	OKLAH	WINNEBAGO		70	FREE	20	91			17.5	4:48	4:48
4152	1630	OKLAH	WINNEBAGO		70	FREE	20	100			12.4	3:19	3:20
186LEC	1645	CAL	CHEV.	CAMERO	74	FREE	25	96	-.6 -.3		9.7	0:40	0:55
329HQA	1645	CAL	FORD	S.W	73	FREE	25	82	-3.2-2.4		18.8	1:40	1:43
CUD923	1700	GEORG	MERCURY	CAPRI	74	BOTH	20	82	-.1 -.1		9.	1:23	1:25
TC528697	1705	CAL.	TOYOTA	DELUX	74	FREE	20	80			7.6	1:07	1:09

STATION: STANDARD		PROCESS: INTERMARK		LOCATION: CARMEL VALLEY + IS				DATE: 6/ 6/74					
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
406DKA	1710	CAL	FORD	PINTO HA	71	FREE 25	79	+1 0			9.4	1:21	1:24
228BQ1	1715	CAL	V.W.	BUG	70	LOCAL 5	68				9.9	1:20	1:30
T0934996	1725	CAL.	FIAT	X19	74	FREE 15	76				9.7	2:00	2:00
372KLS	1730	CAL	HONDA		73	LOCAL 1 1/2	74				6.8	1:00	1:03
D2T709	1730	CALIF	V.W	BUS	68	LOCAL 1 1/2	74				13.9	2:05	2:12
447DKC	1735	CALIF	MERC	CAPRI	73	FREE 22	80		NO	NO	7.4	1:05	1:05
XUV484	1740	CALIF	FORD	CLUB WAG	69	LOCAL 1	70		NO	NO	8.8	1:17	1:17
016JRX	1745	CALIF	CHEVROLET	SW	73	FREE 200	82		NO	NO	13.4	1:58	1:58
ZND264	1750	CAL	MG	B	69	STANDING	74		NO	NO	13.5	1:25	1:27

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/11/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
ZMR401	1045	CALIF	CHEVROLET	CAPRICE	68	LOCAL 1	71					:	:
G79EQU	1055	CALIF	MERCURY	MONTEGO	72	FREE 100	79			8.6	9.4	1:30	1:30
18116R	1130	CALIF	FORD	F250	73	FREE 10	74	-2 -1.5		NO	18.3	2:30	2:30
937JFS	1150	CALIF	CHEVROLET	IMPALA	73	LOCAL 5	78	-3 -3		NO	15.5	2:13	5:00
672GXG	1220	CALIF	OLDSMOBILE	COUGAR	73	LOCAL 1	81	-4			13.6	2:05	3:40
774JEL	1230	CALIF	CHEVROLET	CHEVELLE	73	LOCAL 4	72	-4			18.4	2:56	3:00
041GOA	1245	CALIF	AMERICAN M	GREMLIN	72	PARKED 3 HRS	78				15.0	2:40	3:50
TGT771	1305	CALIF	VW	SEDAN	66	LOCAL 1	77				5.3	1:30	1:30
862JQT	1310	CALIF	FORD	FAIRLANE	68	LOCAL 1	79				11.8	1:28	1:28
422HOS	1315	CALIF	PLYMOUTH	SATELLIT	73	LOCAL 2	86				18.6	2:30	2:35
738JLA	1440	CALIF	VW	WAGON	73	LOCAL 1/2	78				7.8	0:57	0:57
072FKX	1445	CALIF	FORD	TORING	72	LOCAL 2	91				8.9	1:10	1:15
689ESK	1458	CALIF	CHEV.	MONTECAR	72	LOCAL 2	96			NO	8.9	1:15	1:30
613KAG	1530	CALIF	CHRYSLER	NEWYORKE	74	LOCAL 5	81				15.1	1:56	1:56

STATION: UNION 76

PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/11/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
43 204 U	1535	CALIF	CHEVROLET	PICK-UP	74	FREE 150	91				10.0	2:10	2:10
799JEH	1600	CALIF	VW	SEDAN	59	LOCAL 1/2	81				9.8	1:18	1:20
RJP777	1700	CALIF	RAMBLER	AMERICAN	65	FREE 5	88				12.0	2:18	2:30
450ETV	1735	CALIF	PONTIAC	GRANDPRI	71	FREE 8-10	83	5.6 5.6			21.0	3:10	3:30
059GJX	1745	CALIF	BUICK	ELECTRA	74	FREE 8	84	7.5 6.5		7.4	20.4	3:00	3:17
299HWV	1610	CALIF	PLYMOUTH	DUSTER	73	LOCAL 4	81				9.6	1:30	1:30
211FYZ	1634	CALIF	RAMBLER	S/W	65	LOCAL 1.5	77			NO	15.1	2:25	3:10
WLN696	1648	CALIF	FORD	CUSTOM 5	68	LOCAL 6	84			NO	10.6	1:20	1:20
WBF900	1658	CALIF	FORD	MUSTANG	68	LOCAL 12	79			NO	8.2	1:40	1:40
1DDL1221	1300	CALIF	AUDI	100LS	74	FREE 20	84			NO	3.5	0:50	0:50
137GXA	1755	CALIF	BUICK	RIVIERA	73	LOCAL 10	86			NO	8.9	1:19	1:19

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY					DATE: 6/12/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME	
1043376	0935	CAL	FORD	MAVERICK	74	FREE	9.7	71	1	1/3	3	8.8	12.5	2:20 2:55
711KLQ	0955	CALIF	DATSUN	610	74	LOCAL	1	64				11.8	2:10	2:33
12831R	1010	CAL	FORD	RANCHERO	73	NONE	0	67	4	3/4		NO	18.0	3:22 3:30
72506W	1020	CALIF	CHEV	350CUSTO	74	NONE	0	00				12.9	2:45	3:39
603GBY	1035	CALIF	FORD	TORINO	72	NONE	0	67	1/2	0	NO	NO	16.0	3:00 3:34
TRN863	1050	CAL	FORD	WAG	67	LOCAL	1.5	67				11.4	2:00	2:07
312HPO	1105	CALIF	MERCURY	BROUGHAM	73	LOCAL	0	67	2	.75	3	7.6	6.8	1:02 2:50
000D20	1120	CALIF	FORD	LTD	72	FREE	15	76	2.0	.75	3	NO	11.0	2:35 2:58
1170078	1135	CAL	FORD	LTD	74	FREE	160	79	.5	.25		NO	11.4	2:10 2:14
903DSM	1145	CALIF	FORD	GALAXY	71	LOCAL	PARKE	76				NO	8.0	1:22 2:18
K0Y327	1350	CAL	CHEV	BEL-AIR	53	LOCAL	3	75				NO	5.7	0:55 1:20
162DVQ	1400	CALIF	AMERICAN M	HORNET-2	71	LOCAL	1	78				NO	8.2	1:30 2:5
205JRT	1420	CAL	CHEV	MONTECAR	72	FREE	60R7	81	1.	.75	3	7.	3:15	3:50
264FNL	1425	CALIF	MER	MOT	72	FREE	5	87				NO	5.7	0:56 1:11

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/12/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
60421F	1430	CALIF	CHEV	CUSTOM/1	70	FREE 12	76			NO	3.8	0:40	0:50
446JEC	1440	CAL	CHEV	VEGO	73	PARKED 0	80	1 .5	3	NO	8.	1:25	2:07
526GGG	1500	CALIF	CHEC	IMPALA	72	LOCAL 1	70	1 .5		NO	14.5	2:25	3:01
236KLM	1510	CALIF	DODGE	POLARA	65	50/50 7	89	.5 .3	3		10.0	1:40	2:15
101ASI	1545	CALIF	FORD	C SEDAN	70	FREE 15	86			NO	5.7	1:02	1:09
653FBX	1610	CAL	MERCEDES	350SL	72	FREE 7	98			NO	13.2	2:15	2:35
ZQD792	1625	CAL	VW	2DR BUG	69	LOCAL 1	77			NO	8.1	1:28	1:35
V29741	1650	CAL	FORD	RANCHERO	67	FREE 5	79				15.2	2:35	2:55
RGD594	1700	CAL	V.W	BUG	65	LOCAL 1	78			NO	8.3	0:55	1:58
86394E	1705	CAL	CHEV	G/20	69	LOCAL 3	81				3.8	0:30	0:45
689DLX	1710	CALIF	VW	CAMPER	71	PARKED 0	70			NO	11.9	1:25	1:36
550KPG	1715	CAL	PLYMOUTH	VALIANT	66	FREE 20	86			NO	9.5	1:40	2:00
611GGS	1725	CAL	OPEL	CADET	72	LOCAL 5	79				6.9	1:10	1:35
148HDT	1730	CAL	MAZDA	RE	72	FREE 70R8	78			NO	13.7	1:30	2:03

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
37498W	1745	CALIF	CHEVROLET	VAN-20	74	LOCAL 1	74			NO	14.8	2:30	2:40
159KZQ	1755	CAL	FORD	RANCH W.	66	FREE 15	80			NO	11.6	2:01	3:57

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/13/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
Q72787	1117	CALIF	FORD	RANGER P	67	LOCAL 7	70				NO	16.0	2:35 2:35
78784L	1125	CALIF	FORD	PICKUP	72	LOCAL .5	74				NO	5.7	1:10 1:10
105HDT	1133	CALIF	OLDSMOBILE	CUTLASS	73	FREE 3	86	1 .5	3	NO	8.5	2:00 2:10	
93229G	1145	CALIF	CHEVORLET	C-30 TRU	70	LOCAL .25	70		3	NO	10.0	2:50 3:00	
QMV785	1155	CALIF	CHEVROLET	DELUXE	52	LOCAL 3	75			NO	7.6	2:00 2:00	
754KLS	1225	CALIF	PLYMOUTH	VALIANT	67	FREE 7	75			NO	9.1	2:30 3:30	
TET248	1230	CALIF	V.W.	BUG	66	LOCAL 1	74			NO	8.6	1:00 1:10	
999DUH	1257	CALIF	V.W.	BUG	71	FREE 11	88			NO	14.3	2:30 2:35	
KUL605	1300	CALIF	DODGE	LANCER 7	61	LOCAL 10	80			NO	8.4	1:26 1:32	
909JSZ	1310	CALIF	CHEVROLET	VEGA GT	73	FREE 8	89	0 0		8.6 9.9	2:45 3:00		
45280L	1335	CALIF	CHEVROLET	CUSTOM 2	72	LOCAL .2	68			8.6 10.0	1:17 1:23		
376DFJ	1345	CALIF	CHEVROLET	NOVA	71	FREE 10	80			NO	6.5	1:00 1:10	
668KHW	1350	CALIF	MERCURY	COMET	66	LOCAL 2	85			NO	12.2	2:25 2:25	
TXG714	1415	CALIF	PONTIAC	LEMANS	67	LOCAL .5	81			NO	5.7	1:03 1:05	

STATION: GULF		PROCESS: GULF BALANCED			LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/13/74				
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
OUM753	1416	CALIF	DODGE	DART GT	64	FREE 13	82			NO	5.7	1:22	2:15
0238796	1425	CALIF	CHEVROLET	NOVA	74	FREE 5	84			NO	10.0	1:31	1:34
735GOW	1450	CALIF	CHEVROLET	KS-BLAZE	73	FREE 5	84			NO	20.9	3:45	4:00
288BEX	1530	CALIF	FORD	MAVRICK	70	FREE 20	88			NO	8.3	1:27	1:30
VEU721	1545	CALIF	DODGE	CORNET 4	68	LOCAL 1	88			NO	18.6	3:30	4:00
U40716	1600	CALIF	FORD	ECONOLIN	66	FREE 6	88			NO	7.9	1:23	1:35
87764N	1605	CALIF	CHEVROLET	CHEYENNE	73	LOCAL 5	86			NO	17.1	3:00	3:10
122DFK	1615	CALIF	FORD	MAVRICK	70	LOCAL 5	90			NO	3.8	0:55	1:00
247ADR	1640	CAIF	FORD	TORINO	70	FREE 12	83			NO	13.0	2:30	2:45
TTF-876	1645	CALIF	CHEVROLET	CAMERO	67	LOCAL 10	80			NO	14.4	2:35	2:40
585GBT	1650	CALIF	V.W.	BUG	69	LOCAL 10	75			NO	2.8	0:40	0:40
XTL389	1700	CALIF	FORD	MUSTANG	65	LOCAL 1	76			NO	13.3	2:25	2:30
89461L	1730	CALIF	GMC	2500 CUS	72	FREE 20	87			NO	1.9	0:25	0:25
OZT057	1735	CALIF	FORD	MUSTANG	67	LOCAL 3.5	86			NO	9.5	1:40	1:40

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/13/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
86467P	1740	CALIF	CHEVROLET	CUSTOM/2	73	LOCAL 4	77			NO	14.6	3:40	3:35
728FEA	1750	CALIF	TOYOTA	LAND CRU	71	FREE 100	85		3	NO	25.7	3:40	3:50
TST284	1000	CAL	VW	STATION	67	LOCAL 2	64			NO	6.	1:30	2:00
H54055	1015	CAL	CHEV	1/2 PICK	54	LOCAL 1	64			NO	13.9	2:30	2:45
7410ZE	1025	CAL	CHEV	VEGA2300	72	FREE 5	81			NO	8.9	2:15	2:30
534BXV	1030	CAL.	VW	BUG	70	LOCAL 4	66			NO	5.7	1:45	1:45
743CTT	1040	CAL	CHEV	CAPRICE	71	LOCAL 1	75			NO	7.9	1:30	1:40
735DQK	1050	CALIF	FORD	MAVERICK	72	LOCAL 1	72			NO	4.4	1:15	1:15
103AFD	1055	CALIF	VW	BUG	70	FREE 15	67		3	NO	8.9	1:30	1:30
587KAC	1120	CAL	PLYMOUTH	DUSTER	72	LOCAL 1	74			NO	3.8	0:45	1:00
TAA480	1140	CALIF	PLYMOUTH	BARRACUD	66	LOCAL 3	78			NO	12.1	1:45	2:0
049DZN	1150	CALIF	VW	411	71	FR 10	73			NO	9.8	1:10	1:15
378GNZ	1330	CALIF	PLYMOUTH	DUSTER	73	LOCAL 1	85			NO	13.9	3:45	4:10
508KHV	1355	CALIF	CHEV	IMPALA	74	LOCAL 1	00 0.1 J			NO	17.5	3:55	4:45

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/13/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
389CEC	1400	CAL	FORD	PINTO	71	LOCAL 3	90			NO	9.	1:00	1:15
58278S	1400	CALIF	DATSUN	PICKUP	74	FREE 15	91			NO	3.8	0:56	0:56
ZRDLR2733	1415	CALIF	FORD	MUSTANG	74	LOCAL 2	92			NO	3.8	1:00	1:00
VNM013	1425	CALIF	OLDS	CUTLASS	67	FREE 18	81			NO	8.7	1:00	1:05
FQA058	1430	CALIF	CHRYSLER	NEWPORT	63	LOCAL 1	84		3	NO	3.8	1:15	1:30
962GAP	1455	CALIF	PONTIAC	LEMANS	68	FREE 6	93			NO	1.9	0:40	0:40
22647D	1505	CALIF	FORD	250-3/4	69	FREE 17	82			NO	23.4	3:30	3:35
0ZN598	1520	CALIF	FORD	GALAXIE	64	LOCAL 2	72			NO	5.8	1:10	1:30
111KLP	1555	CAL	CHEV	MONTECAR	74	FREE 6	103			NO	18.2	3:15	3:25
286KPH	1500	CAL	HONDA	CIVIC	74	FREE 12	79			NO	3.8	0:45	0:45
RBA634	1610	CALIF	BUICK	440SPEC	66	FREE 50	87			NO	9.5	1:00	1:10
469HDR	1630	CALIF	HONDA	COUPE	72	LOCAL 3	79			NO	4.	0:45	1:0
LZA573	1640	CALIF	MERCEDES	220SE	60	LOCAL 1	85				1.9	0:40	0:45
140EAV	1645	CAL	VW	BUS	71	LOCAL 1	77		3		9.5	1:15	1:15

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/13/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
48457W	1655	CAL	DODGE	1/2TON P	65	LOCAL 2	75			NO	16.2	3:00	3:10
WRY045	1700	CAL	VW	BUG	69	LOCAL 5	86			NO	8.	1:40	1:45
XOR052	0955	CALIF	DATSUN	510SW	74	LOCAL 2	64			NO	8.8	1:31	1:31
228KZC	1020	CALIF	CHEVY	CHEVY II	67	FREE	72	N.D	NO	NO	7.8	1:51	1:51
206ANU	1040	CALIF	OLDSMOBILE	F-85	64	LOCAL 16	77			NO	3.8	1:45	1:45
46729P	1050	CALIF	CHEVROLET	C-20 PIC	69	LOCAL 3	68			NO	9.5	2:32	2:33
VSL427	1103	CALIF	OLDSMOBILE	TORONADO	69	LOCAL .25	76			NO	3.8	1:01	1:01

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY					DATE: 6/14/74		
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
76625H	0845	CALIF	FORD	VAN	71	PARKED0				NO	3.8	0:45	1:45
603GBY	0910	CALIF	FORD	TORINO	72	FREE 15	75	1.0 .3	3	8.8	5.0	0:55	1:45
XWE767	0915	CALIF	VW	SEDAN	69	LOCAL 1	69			NO	8.5	1:15	1:40
E82646	0920	CALIF	FORD	CAMPER	57	FREE 9	65			NO	8.2	1:20	1:22
130HQE	0925	CALIF	DODGE	DART	73	LOCAL 1.0	76			NO	12.0	2:10	2:50
312HP0	0940	CALIF	MERCURY	MARQUIS	73	FREE 6	80	1.0 .3	3	6.6	12.0	2:10	3:55
045CHF	0950	CALIF	CHEVY	VEGA	71	LOCAL 1	73			NO	3.8	0:50	0:50
12831R	1005	CALIF	FORD	ELCAMINO	73	PARKED0	69			NO	4.3	1:10	3:20
32391E	1020	CALIF	CHEVY	CAMPER	69	LOCAL 3	69			NO	16.3	2:00	2:35
049FNU	1030	CALIF	FORD	TORINO	72	LOCAL 1/2	68	3.0 .75	3	NO	3.5	0:40	2:06
811HSD	1045	CALIF	DATSUN	510SEDAN	73	LOCAL 3	76			NO	4.7	1:5	1:10
44053F	1050	CALIF	MERCURY	WAGON	70	FREE 8	76			NO	14.3	2:30	2:45
700KFC	1120	CALIF	CHEVY	VEGA	74	FREE 154	101			NO	5.4	1:00	1:54
724CTU	1120	CAL	CHEV.	VEGA	71	LOCAL 3 BLK	87			NO	9.4	1:45	1:55

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY					DATE: 6/14/74		
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
P29192	1130	CALIF	CHEVY	CAMPER	64	FREE 260	82			NO	15.4	2:40	2:51
680GOC	1145	CALIF	CHEVY	NOVA	73	PARKED0	82	0.5 0.25	3	NO	13.3	2:30	3:10
DZN800	1200	CALIF	CHEVY	WAGON	64	LOCAL 1	79			NO	15.8	3:05	3:07
379HMM	1205	CALIF	DODGE	CHARGER	73	LOCAL 4	87			NO	14.9	2:50	3:00
GREATE	1215	CALIF	VW	SEDAN	69	LOCAL 40	75			NO	8.1	1:35	1:45
105JSX	1215	CALIF	OLDSMOBILE	OMEGA	73	LOCAL 5	76			NO	16.3	2:55	3:10
00J977	1220	CALIF	CHEVY	SEDAN	56	LOCAL 1/2	82			NO	5.7	0:55	0:55
UZA117	1225	CALIF	CHRYSLER	300SEDAN	67	LOCAL 1	84			NO	5.7	1:00	1:05
045GXH	1230	CALIF	MAZDA	RX3-WAGO	73	LOCAL 1/2	00			NO	13.1	1:45	1:47
BTJ-788	1235	MICHI	CHEVY	CHEVELLE	70	FREE 12	87			NO	5.7	1:17	1:20
RQX809	1245	CALIF	DODGE	DART	65	LOCAL 1/2	93			NO	10.5	2:15	2:20
WTK414	1250	CALIF	DODGE	DART	68	LOCAL 1	80			NO	11.8	2:30	2:35
060HZL	1250	CALIF	DODGE	CHARGER	73	LOCAL 1/2	93			NO	1.9	0:55	0:55
554COA	1255	CALIF	FORD	PINTO	71	LOCAL 1	83			NO	5.7	2:00	2:00

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/14/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
TWA441	1300	CALIF	FORD	MUSTANG	70	LOCAL 1	98			NO	10.0	2:05	2:15
36-0699	1305	NEBRA	FORD	GALAXIZ	79	LOCAL 1	79			NO	16.1	3:00	3:05
M12136	1315	CAL	CHEV	PICKUP	56	LOCAL 7	79			NO	3.8	:50	:50
ZZW270	1330	CAL	CHEV	IMPALA	66	LOCAL 1/2	85			NO	9.5	1:45	1:50
373COR	1332	CAL	VW		66	FREE 1/4	84			NO	8.4	1:15	1:15
235JEG	1335	CAL	PLYM	S/WAG	72	LOCAL 5	84			NO	15.9	2:50	2:50
OZV830	1340	CAL	CHEV	IMPALA	64	FREE 24	95			NO	3.8	0:53	1:04
916CFV	1400	CAL	FORD	TORINO	71	FREE 25	93			NO	13.6	2:25	2:50
632AVL	1415	CALIF	VW	BUS	61	PARKED 0	78			NO	8.9	1:47	2:5
VIX957	1425	CAL	CHEV	COR	65	FREE 30	79			NO	1.9	:35	:35
KPP346	1430	CAL	CHEV	DELUX	41	LOCAL 15	79			NO	0.0	1:55	1:55
WJX321	1435	CALIF	FORD	MUSTANG	68	LOCAL 7	90			NO	14.2	2:45	3:10
RSS989	1440	CAL	CHEV	BELAIR W	66	LOCAL 6	85			NO	6.	:45	1:15
WBF424	1450	CAL	MERCURY	COUGAR	68	LOCAL 5	88				1.9	:40	:45

STATION: GULF		PROCESS: GULF BALANCED				LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/14/74			
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
77111R	1502	CAL	FORD	WALK-IN	65	LOCAL .5	87			NO	8.9	1:44	1:55
756CYD	1500	CAL	AMC	JAVELIN	70	FREE 8	86			NO	8.8	1:40	2:25
XND019	1510	CALIF	CHEV	CHEVELLE	68	LOCAL 2	85			NO	10.7	1:55	3:05
0233401	1520	CALIF	FORD	PINTO	74	FREE 98	96			NO	10.9	2:10	2:15
TV5029	1525	CALIF	DODGE	270	66	FREE 8	88			8.4	11.5	2:20	2:45
VEP825	1540	CAL	TOYOTA	1900	67	LOCAL 1	89			NO	9.5	1:55	2:30
WIW853	1545	CAL	VW	BUG	68	LOCAL 1	86			NO	0.0	:45	:45
XVD904	1555	CAL	TOYOTA	CRONA	65	LOCAL .5	83			NO	3.8	1:15	1:15
804GJD	1600	CAL	CHEV	VEGA2300	72	FREE 120	108			NO	9.	1:45	2:20
624EOY	1640	CAL	FORD	GALAXIE	72	LOCAL 3	85			NO	16.0	3:10	3:10
VES152	1645	CAL	DODGE	DART	67	LOCAL .5	84			NO	15.4	2:45	2:55
432GJH	1310	CAL	FORD	PINTO ST	72	LOCAL 1/4	77			NO	9.1	2:10	2:10
RDJ199	1345	CALIF	PONTIAC	LEMANS	65	LOCAL 0.1	79			NO	1.9	:20	0:20
XOR989	1350	CAL	PLYMOUTH	VALIENT	69	FREE 10	91			NO	3.8	:55	:55

STATION: GULF		PROCESS: GULF BALANCED		LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/14/74					
LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
XVC286	1405	CAL	MERCEDES	220SE	63	FREE 85	91			NO	7.6	1:45	1:55
093GFK	1410	CALIF	AMD	S/W	73	LOCAL 1/4	81			NO	7.9	1:30	1:45
117KPH	1428	CALIF	HONDA	CIVIC	74	LOCAL	80			NO	3.8	1:45	1:45
0V9512	1425	PENNA	CHEV	NOVA	73	BOTH 45	101			NO	3.8	1:05	1:10
232GSN	1430	CALIF	VW	KAMBACK	69	LOCAL 13	90			NO	4.8	0:55	1:10
KTR796	1445	CAL	PLY	VALIANT	63	STANDI	79			8.7	9.8	2:10	2:10
216KXG	1458	CAL	FORD	PINTO	72	FREE 50	93			NO	8.4	1:30	1:45
EHY401	1515	VIRGI	CHEVY	VEGA WAG	73	FREE 10	94			NO	7.9	1:40	1:55
265KXL	1530	CAL	DODGE	DART	74	BOTH 12	88			NO	9.5	1:30	1:30
8708ML	1533	CAL	VW	BUS	65	FREE 50	84			NO	0.0	1:10	1:10
225HQB	1337	CAL	BUICK	RIVIERA	67	FREE 10	96				9.5	1:35	2:10
77263V	1542	CAL	FORD	FALCON	60	LOCAL 1/4	88			NO	3.8	0:35	0:45
78059V	1546	CAL	DODGE	VAN	73	LOCAL 3-5	86		3		18.1	3:15	3:30
SMI602	1555	PENN	CHEV	NOVA	73	FREE 200	93				15.0	2:30	2:45

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
TVW744	1605	CALIF	CHEV	IMPALA	67	LOCAL 4	00				19.5	3:30	3:35
281BIJ	1625	CAL	PLYMOUTH	DUSTER	71	BOTH 6	88			NO	9.6	1:50	2:15
KSU028	1632	CAL	MERCURY	COMET	64	LOCAL 5	86				14.1	2:00	2:10
962GAP	1650	CAL	PONTIAC	LEMANS	68	LOCAL 2	90			NO	15.4	2:30	2:45
TXG511	1645	CAL	CHEV	IMPALA	67	FREE 2	111			NO	5.7	1:0	1:0

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
449JEL	1003	CAL	CHEV	VEGA SW	73	LOCAL 10	82			NO	4.9	1:00	1:25
44763S	1006	CAL	VW	BUS	60	LOCAL 1/4	68			NO	5.1	1:55	1:10
359KZC	1100	CAL	OLDS	CUTLASS	74	FREE 25	88			NO	19.8	2:45	3:00
918KKL	1150	CALIF	PLYMOUTH	FURY II	74	FREE 15	78	.6 .3 .3		8.5	20.4	3:45	4:15
730HNF	1220	CALIF	FORD	CAPRI	73	LOCAL 1/4	90			NO	10.3	1:45	1:55
89046N	1230	CALIF	FORD	PICKUP	72	LOCAL 6	74			NO	22.5	3:45	4:15
WSU778	1350	CALIF	VW	SEDAN	68	LOCAL 1/2	80			NO	8.5	1:30	4:40
932HWN	1400	CALIF	FORD	WAGON	73	LOCAL 3	88	2.5 1.5 3		8.8	10.0	1:30	1:50
549JLB	1430	CALIF	VW	KARMANNG	73	FREE 11	77			NO	3.5	1:30	1:45
XXX	1450	CALIF	FORD	CAPRI	74	FREE 10	90	.75 .30 3		NO	3.5	1:30	2:1
574KMK	1610	CALIF	OLDSMOBILE	DELTA 88	74	FREE 118	100	.70 .30 3		8.2	7.5	1:15	1:45
205JRT	1615	CAL	CHEV	MONTE CA	74	BOTH 25	96			NO	10.9	1:50	2:30
694HDP	1648	CALIF	FORD	CAPRI	73	LOCAL 4	98			NO	9.5	2:05	2:30
15874V	0905	CALIF	DATSUN	1600PICK	73	LOCAL 4	72			NO	8.2	1:32	1:32

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
292G0Z	0930	CALIF	FORD	PINTO	72	LOCAL .5	77			NO	5.2	1:00	1:00
545HTC	1000	CALIF	PLYMOUTH	SATELLIT	73	FREE 100	93			NO	17.4	3:00	3:55
570CYM	1005	CALIF	CHEVY	IMPALA	62	LOCAL 10	75			NO	17.8	3:10	4:00
V28979	1125	CALIF	CHEVROLET	PICKUP	67	LOCAL 2	76			NO	5.2	1:45	1:45
786KX0	1155	CALIF	CHEVROLET	IMPALA	74	FREE 5	84			NO	16.7	2:52	2:52
012JOH	1210	CALIF	FORD	PINTO	73	FREE 25	91			NO	5.2	0:55	0:55
VNX430	1315	CALIF	VW	SEDAN	67	LOCAL 3	80			NO	7.7	1:25	1:25
315KZB	1345	CALIF	FORD	CUSTOM	68	LOCAL 5	82			NO	19.4	3:25	3:33
519KZE	1420	CHEV	CHEVROLET	BEAUVILL	74	LOCAL 2	80			NO	17.2	3:10	3:15
DUL602	1435	CALIF	FORD	FAIRLANE	65	FREE 30	95			NO	1.7	0:15	0:15
ZQM799	1510	CALIF	FORD	FAIRLANE	69	FREE 10	83			NO	10.0	1:15	1:15
590BAG	1545	CALIF	CAPRI	CAPRI	71	FREE 20	85			NO	9.9	1:55	2:45
675EAU	1550	CALIF	CHEVROLET	CAPRICE	71	LOCAL 1.5	83			NO	19.5	3:10	3:15
228LKY	1555	CAIF	CHEVROLET	CHEVELLE	71	LOCAL .5	81			NO	5.2	0:57	1:00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVF	GALL FILL	FILL TIME	TOT NOZL TIME
295KQQ	1645	CALIF	CHEVROLET	SPORTVAN	74	FREE 1	00			NO	12.9	2:20	2:30

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
597DWY	0745	CALIF	TOYOTA	CORONA	72	LOCAL 6	72			NO	10.0	2:45	4:00
915HWP	0810	CALIF	DODGE	CORONET	74	LOCAL .5	63			NO	18.5	3:10	3:20
751GGX	0845	CALIF	PONTIAC	CATALINA	73	LOCAL 1.	66			NO	17.6	3:05	4:10
427KQR	0845	CALIF	CHEVROLET	IMPALA	73	LOCAL 1.	69			NO	20.8	3:45	4:30
172FVP	0855	CALIF	FORD	PINTO	72	LOCAL 1	63			NO	6.1	1:05	2:01
031H01	0905	CALIF	FORD	GALAXIE	73	LOCAL 10	79			NO	18.5	3:15	3:25
074KQ5	0915	CALIF	FORD	PINTO	73	LOCAL 2	76			NO	9.7	2:40	3:00
679GTH	0920	CALIF	CHEVROLET	CAPRICE	73	LOCAL .25	70			NO	20.2	3:20	3:45
903KLW	1205	CALIF	CHEVROLET	MALIBU	74	FREE 10	37			NO	4.3	0:45	2:10
678GUP	1230	CALIF	FORD	PINTO	71	LOCAL 2	85			NO	7.2	1:10	3:35
572FFR	1345	CALIF	FORD	CUSTOM	72	FREE 20	83			8.6	9.8	1:55	2:30
082JDK	1400	CALIF	CHEVROLET	MONTE CA	73	LOCAL 10	88			NO	8.6	1:42	4:42
311JLE	1410	CALIF	FORD	TORINO	73	LOCAL 20	99			NO	15.2	3:20	3:40
723HFP	1415	CALIF	FORD	LTD	73	FREE 10	89		3	NO	8.6	1:37	3:15

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
ZND264	1425	CALIF	M.G.	MGB	69	PARKED	89		3	8.6	12.0	2:10	3:20
701BLK	1440	CALIF	CHEVROLET	BISCAYNE	70	FREE 25	96			NO	15.2	3:00	3:10
SPOOK J	1445	CALIF	CHEVROLET	EL CAMIN	72		76	.6 .3		NO	15.3	2:50	2:55
438CTY	1500	CALIF	FORD	PINTO	71	FREE 15	92			NO	7.5	:	:

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
0388293	0645	CALIF	FORD	VAN	74	LOCAL 10	00			NO	16.8	2:50	3:
170FTD	0715	CALIF	MAZDA	RX2	73	LOCAL 1	62			NO	9.5	2:	2:15
842G0Z	0730	CALIF	MAZDA	RX2	72	LOCAL 1/8	00			NO	14.5	3:30	3:30
645KZR	0800	CALIF	MERCURY	MONTEGO	74	LOCAL 1.5	67			NO	18.5	3:10	3:20
603ESM	0855	CALIF	VW	BUG	70	LOCAL 1	70			NO	9.5	1:35	2:15
399CQQ	0925	CALIF	CHEVROLET	CAPRICE	69	LOCAL .5	71			NO	5.2	1:30	1:30
NOZ707	1030	CALIF	DODGE	DART	65	LOCAL .5	69			NO	11.3	1:55	2:05
545HTC	1335	CALIF	PLYMOUTH	SATELLIT	73	FREE 125	96		2	NO	15.0	2:35	3:15
103AFM	1400	CALIF	VW	BUG	70	LOCAL 1	95				9.2	1:30	1:40
239CTV	1450	CALIF	PLYMOUTH	FURY I	71	FREE 10	88	-.8 -.5		NO	12.8	2:15	2:25
G1157827	0630	GOVT	A M C	MATADOR	71	LOCAL 10	66			NO	14.8	2:30	2:55
260KZE	0655	CALIF	DODGE	VAN	71	LOCAL .5	61			NO	8.6	2:30	2:35
405JYC	0657	CALIF	CHEVROLET	IMPALA	74	FREE 15	74	.8 .5	2	YES	17.5	3:20	4:20
302JQU	0745	CALIF	DODGE	VAN	73	LOCAL .25	60			NO	16.7	3:00	3:05

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
F42556	0730	CALIF	CHEVROLET	PICKUP	61	LOCAL .10	58				NO 15.9	2:55	3:00
545JSK	0735	CALIF	FONTIAC	FIREBIRD	73	LOCAL .25	69				NO 12.1	2:10	2:15
603GBY	0750	CALIF	FORD	TORINO	72	FREE 8	77 1.1 .9	2		8.0 5.2	0:42	0:55	
038KQR	0815	CALIF	DATSUN	260Z	74	LOCAL 1	00				NO 10.3	2:55	2:55
UUP088	0830	CALIF	MERCURY	MONTEREY	67	LOCAL .75	66				NO 10.5	1:40	4:15
438JUA	0835	CALIF	DODGE	CORONET	73	LOCAL 3	66 .6 .4	2		8.7 7.5	1:30	1:35	
999HGP	0915	CALIF	FORD	TORINO	73	FREE 130	86 .7 .3				NO 7.0	1:30	3:00
338JQN	0935	CALIF	CADILLAC	DE VILLE	73	LOCAL .5	70				NO 12.6	2:00	2:45
907KES	0930	CALIF	FORD	MUSTANG	74	FREE 8	74 0 0	2		8.6 7.3	1:35	2:00	
574KNK	1025	CALIF	OLDSMOBILE	ROYALE	74	FREE 20	89				NO 12.0	2:00	2:30
122JQV	1035	CALIF	CADILLAC	SEDAN	73	FREE 115	90 +.7 +.2	2		NO 10.0	2:45	3:00	
105HDT	1055	CALIF	OLDSMOBILE	CUTLASS	73	FREE 10	97 +.5 0	2		NO 16.0	2:45	3:00	
RKP800	1125	ARIZ	CHEVROLET	VEGA	71	LOCAL 3	80				NO 4.5	1:05	1:15
534KZR	1155	CALIF	DODGE	CHARGER	73	LOCAL .5	77				NO 8.6	1:35	1:40

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
PHP979	1210	CALIF	FORD	FALCON	65	FREE 20	120			NO	3.4	0:35	0:40
UNP684	1230	CALIF	CHEVROLET	BELAIR	67	LOCAL 3	85			NO	13.9	2:30	3:25
033KZ3	1245	CALIF	FORD	PINTO	74	FREE 10	90			NO	7.8	1:30	3:40
RSK421	1255	CALIF	CHEVROLET	IMPALA	65	LOCAL .5	80			NO	5.0	0:53	0:55
90487L	1315	CALIF	CHEVROLET	EL CAM	72	LOCAL 3	91			NO	15.8	2:45	3:30
KKG377	1350	CALIF	FORD	FAIRLANE	63	PARKED	00			NO	6.5	1:15	1:15
240FFS	1440	CALIF	CHEVROLET	CHEVELLE	71	LOCAL 5	95			NO	14.5	2:42	2:55

STATION: TEXACO PROCESS: ENVIRONICS LOCATION: BALTIMORE + FLETCHER DATE: 6/20/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
6518EB	1000	CALIF	VW	BUG	68	FREE 4	80			NO	3.6	1:30	1:30
124ELL	1140	CALIF	CLDS	CUTLASS	72	LOCAL 1	78			NO	15.0	2:00	2:50
623HTS	1140	CALIF	CHEV	M CARLO	73	LOCAL 1	81			NO	3.6	1:30	1:30
PWA684	1200	CALIF	VW	BUG	66	LOCAL 2	73				6.3	1:00	2:15
THE7K	1208	CALIF	BUICK	S WAGON	73	LOCAL 1/16	79				12.4	1:50	3:20
48825L	1226	CALIF	DATSUN	PICK-UP	74	LOCAL 1/16	80				1.8	0:15	1:20
WYM088	1510	CALIF	VW	S WAGON	68	FREE 100	82			NO	1.8	1:18	1:30
WJU456	1520	CALIF	CHEVROLET	C WAGON	68	LOCAL 5	90			NO	15.0	3:25	3:35
770KLB	0408	CALIF	MERCEDES	450SE	74	FREE 120	86			NO	17.9	2:20	3:15
305HDS	0415	CALIF	CLDSMOBILE	CUTLASS	73	LOCAL 1/2	92				19.7	2:45	5:10
WSC130	0520	CALIF	FORD	LTD	68	LOCAL 1/2	83				3.6	1:40	1:50
STEAM2	0537	CALIF	CHEV	LUV	74	FREE 10	87				3.6	0:35	1:00
MW1510	1000	CONN	AMC	HORNET	70	FREE 4	79			NO	13.9	2:10	5:02
93353G	1015	CALIF	DODGE	CARRYALL	62	LOCAL .25	78			NO	11.9	:	:

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
314GXE	1050	CALIF	MERCURY	MONTEGO	73	LOCAL 7	79			NO	18.4	2:52	3:10
PHB110	1055	CALIF	CHEVROLET	-----	61	LOCAL 1	73			NO	3.6	1:25	1:35
662FZG	1100	CALIF	FORD	CUSTOM	72	FREE 100	90			8.2	12.3	2:04	2:30
384KLQ	1105	CALIF	BUICK	APOLLO	74	FREE 8	107			NO	3.6	0:25	0:35
77458U	1115	CALIF	CHEVROLET	LUV	73	FREE 12	92			NO	5.4	0:35	0:45
DYN439	1125	CALIF	VW	BUG	64	LOCAL 10	82			NO	8.8	1:55	2:00
53013L	1130	CALIF	CHEVROLET	EL CAMIN	72	LOCAL 4	95			NO	8.9	1:15	1:43
571HDT	1135	CALIF	DODGE	DART	72	LOCAL 1	79			NO	11.7	2:15	3:05
496JQS	1135	CALIF	MERCURY	MONTEGO	73	FREE 5	89			NO	3.6	0:40	0:50
14382R	1145	CALIF	CHEVROLET	CAMPER	70	LOCAL 1.0	76			NO	17.3	2:45	3:20
37778W	1200	CALIF	CHEVROLET	LUV	74	LOCAL 1.5	96			NO	3.6	0:30	0:40
UKW764	1215	CALIF	VW	WAGON	67	LOCAL 15	86			NO	8.4	1:25	1:37
ZXM782	1307	CALIF	FORD	FALCON	69	LOCAL .25	82			NO	10.2	1:35	2:08
963GOY	1310	CALIF	FORD	PINTO	72	FREE 4	94			NO	11.6	2:40	3:00

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
973JQP	1345	CALIF	CHEVROLET	M CARLO	74	PARKED 0	85			NO	7.2	1:47	1:55
FPN866	1400	CALIF	FORD	FALCON	62	LOCAL 1	90			NO	7.2	1:15	2:45
234HKK	1400	CALIF	-----	-----	73	LOCAL 1	90			NO	3.6	1:25	1:30
716KPH	1407	CALIF	FORD	FAIRLANE	56	LOCAL 1	88			NO	3.6	1:24	1:35
744GOX	1425	CALIF	TOYOTA	600	62	FREE 5	99			NO	6.8	1:53	1:00
760BSB	1500	CALIF	VW	BUG	69	FREE 1	89			NO	9.2	1:20	1:50
444JLC	1510	CALIF	VW	BUG	73	LOCAL 1	90			NO	3.6	0:30	1:07
SNP596	1530	CALIF	VW	BUS	63	LOCAL 1	95			NO	8.3	1:12	2:12
475KLX	1540	CALIF	DODGE	EXEC	73	FREE 102	90			NO	19.7	4:30	5:55
46287P	1550	CALIF	FORD	PICKUP	73	LOCAL .5	88			NO	17.9	2:55	5:00
726FVX	1600	CALIF	DODGE	-----	72	-----	84			NO	11.7	1:52	2:50
785JLA	1605	CALIF	FORD	PINTO	73	LOCAL 2	89			NO	8.9	1:25	1:30
TAM267	1615	CALIF	CLDS	98	66	LOCAL .5	91			NO	1.8	1:15	1:30
AZV456	1650	N M	VW	S WAGON	73	FREE 9	85			NO	5.4	1:30	1:47

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
KOW808	1625	CALIF	CHEVROLET	BELAIR	54	LOCAL .5	86			NO	1.8	:15	:25
17662T	1630	CALIF	CHEVROLET	LOVE	72	FREE 15	99			NO	5.4	:40	:55
20263T	1635	CALIF	CHEVROLET	LUV	72	FREE 10	92			NO	6.9	:50	1:05
400JSJ	1655	CALIF	FORD	LTD	73	FREE 4	98			NO	3.6	:25	:35
WAC301	1705	CALIF	CLDS	442	68	FREE 2.5	103			NO	3.6	:32	1:00
TC8765	1707	CALIF	FORD	COMET	64	LOCAL .5	94			NO	3.6	:40	1:00
710KLT	1710	CALIF	FORD	PINTO	74	LOCAL 5	95			NO	5.	:35	:45
731ELS	1713	CALIF	CHEVROLET	CHEVELLE	62	FREE 15	92			NO	9.6	1:30	2:00
398DLD	1720	CALIF	FORD	PINTO	71	LOCAL 1	85			NO	3.6	:25	:30
Q81070	1725	CALIF	FORD	PICKUP	56	LOCAL .5	85			NO	3.6	:45	:55
VNV049	1730	CALIF	DART	GT	69	FREE 15	95			NO	15.4	2:22	2:50
KGS913	1753	MICH	OLDS	DELTA 88	70	LOCAL 2	84			NO	8.9	:50	1:25

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/24/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
960KZD	0845	CALIF	FORD	PICKUP	69	LOCAL .5	70			NO	3.6	:45	1:00
L36087	0850	CALIF	CHEVEROLET	PICKUP	64	LOCAL 3/4	66			NO	13.9	1:45	2:10
609677	0920	CALIF	FORD	MAVERICK	73	FREE 5	78			NO	12.6	2:50	3:25
72085W	0950	CALIF	CHEVROLET	LUV	74	LOCAL 1	63			NO	2.4	:20	:25
955KLP	0957	CALIF	VW	BUG	74	LOCAL 2	73			NO	5.2	1:30	1:30
DE REEN	0957	CALIF	CHEVROLET	STINGRAY	72	LOCAL .5	71			NO	12.0	1:30	1:37
TAC138	1000	CALIF	DODGE	VAN	66	LOCAL 1.5	73			NO	14.5	2:10	3:10
RUU488	1031	CALIF	CHEVROLET	IMPALA	66	BOTH 25	86			NO	16.4	1:45	3:05
866DND	1040	CALIF	TOYOTA	CORONA	71	LOCAL 3	77			NO	8.8	1:20	1:25
233HMS	1100	CALIF	AM	GREMLIN	71	LOCAL 1	77			NO	15.8	2:24	2:30
680GOC	1150	CALIF	CHEVROLET	NOVA	73	LOCAL 0	83			NO	14.8	1:50	1:55
14022V	1155	CALIF	DODGE	VAN	74	LOCAL 5	93			NO	22.6	3:30	4:30
833FVQ	1241	CALIF	FORD	GRAN TOR	72	FREE 65	101				16.9	2:37	2:47
350G0B	1300	CALIF	CHEVROLET	S WAGON	73	LOCAL 1	99			NO	19.2	3:00	3:10

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/24/74

LICENSE NUMBER	TIME	STATE	MAKE	MODEL	YEAR	DRIVING HISTORY	VEH. TANK TEMP	VEH. TANK PRES	LEAK CHECK	RVP	GALL FILL	FILL TIME	TOT NOZL TIME
455CTV	1330	CALIF	MERCURY	CAPRI	71	LOCAL 1	78				9.6	1:30	1:35
73146W	1345	CALIF	FORD	PICKUP	74	LOCAL 3	84			NO	14.3	2:08	2:15
WYL423	1437	CALIF	DODGE	DART	68	LOCAL 1	90			NO	15.	2:30	2:50
0VC759	1532	CALIF	FORD	FALCON	64	LOCAL 1	101			NO	3.5	1:50	1:51
0238947	1540	CALIF	CHEVROLET	PICKUP	74	FREE 15	84				5.	1:50	1:50
WCMSLM	1545	CALIF	BUICK	LESABRE	74	LOCAL 1	85			NO	8.7	1:00	1:00
994CFV	1645	CALIF	VW	BUG	71	FREE 20	83				9.0	0:59	1:00

APPENDIX C-2
FIELD DATA, PAGE 2 OF 2

STATION: STANDARD

PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + IS

DATE: 6/ 6/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET.
						AFTER	BEFORE		PRES
932HWN	GOOD	0	NO	61	76	254.4	248.3	53	-10.0
080EAT	GOOD	0	NO	62	75	256.6	254.7	57	-9.5
242CTX	GOOD	.1	NO	63	75	259.8	256.6	57	-9.5
13584R	GOOD	>1.0	YES 1C.C.	63	75	264.1	261.4	55	-10.0
E830974	GOOD	.05	NO	70	76	267.7	264.3	56	-11.0
55865F	BAD	1	YES SIG.AMT.	68	76	272.4	268.	56	-10.0
874FLS	GOOD	.1	NO	70	76	277.9	273.3	57	-10.5
C9809	GOOD	0	NO	69	75	280.4	279.2	50	-12.0
059KFQ	GOOD	0	NO	66	75	286.8	280.6	54	-10.5
VCL446	SOME SLIPPAGE	0	YES	68	75	290.2	287.4	52	-11.0
YYG563	GOOD	0	NO	68	75	296.2	290.5	56	-12.0
GQP810	BAD	>1	NO	65	75	298.3	296.3	56	-9.5
60969	BAD	>1	YES	67	75	303.4	298.3	54	-10.
92402X	GOOD	0	NO	64	75	308.3	303.5	58	-10.5

STATION: STANDARD PROCESS: INTERMARK LOCATION: CARMEL VALLEY + I5 DATE: 6/ 6/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET.
						AFTER	BEFORE		PRES
96695E	FAIR	>1	YES SLIGHT	64	75	312.7	308.7	63	-11.0
XYV086	GOOD	0		68	75	317.2	313.2	64	-11.0
R27816	POOR	>1	YES 10000	63	75	321.9	317.7	64	-10.5
TUCKIE	GOOD	0	NO	63	75	322.4	321.	64	-11.0
950DVE	GOOD	0		64	75	326.3	322.9	60	-13.0
VWA636	POOR	.2	NO	61	74	327.6	326.3	57	-15.0
026BHA	GOOD	0	YES 200	63	75	332.5	328.2	58	-13.0
248ACV	GOOD	0	NO	64	75	333.1	332.	58	-14.0
588YHU	GOOD	0	NO	65	75	339.2	335.6	64	-11.0
029ESQ	GOOD	0	NO	65	75	341.6	339.3	64	-10.5
2LX232	POOR	.2		64	75	345.0	341.7	58	-10.0
838GOA	GOOD	0	NO	67	75	348.8	345.3	64	-10.5
830HPA	GOOD	0	NO	68	75	351.9	348.9	70	-16.0
651FVR	GOOD	0	NO	65	75	354.7	351.9	62	-15.0

STATION: STANDARD

PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + IS

DATE: 6/ 6/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR		VAP. CONC	VAP. RET. PRES
							AFTER	BEFORE		
829360	GOOD	0	NO		65	75	358.6	354.	64	-9.5
9020BT	GOOD	0	NO		64	75	362.6	358.8	60	-10.5
73438M	GOOD	0	NO		63	75	366.0	362.8	63	-11.0
18354V	GOOD		NO		64	75	369.0	366.2	60	-13.0
HMX668	POOR	1.0	NO		62	75	371.6	369.2	62	-11.0
XDU752	GOOD	0	NO		65	75	375.2	371.8	66	-10.5
296K8I	GOOD	0	YES	200	64	75	382.1	375.3	58	-15.0
SKE220	POOR	>1	YES	5000	63	75	385.	382.2	60	-14.5
4152	FAIR	0	YES	2500	64	75	391.8	385.6	59	-15.0
4152	GOOD	0	YES	2500	63	75	399.7	391.9	62	-15.0
186LEC	GOOD	0	NO		62	75	402.6	399.8	64	-10.0
329HQA	-----	-----	---	-----	65	75	406.8	402.7	67	-11.0
CUD923	GOOD	0	NO		63	75	410.4	407.0	59	-15.0
T6528697	POOR	.1			64	75	413.3	410.6	57	-14.0

STATION: STANDARD

PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + I5

DATE: 5/ 6/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
406DKA	GOOD	0	NO	64	75	416.4	413.5	61	-15.0
228BQ1	GOOD	0	NO	62	75	420.8	416.4	62	-11.0
T0934996	FAIR	.05 -	--- -----	67	75	423.5	420.0	60	99999
372KLS	GOOD	0	NO	64	75	426.1	423.8	59	-18.5
D2T709	FAIR	.4-.6	NO	64	75	431.6	426.2	60	-15.7
447DKC	GOOD	0	NO	62	75	434.7	431.8	57	-15.7
XUV484	GOOD	0	NO	62	75	438.3	434.8	60	-12.0
016JRX	GOOD	.1	NO	62	75	443.4	438.4	58	-15.0
ZND264	GOOD	0	NO	62	75	447.4	443.6	60	99999

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/11/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
ZMR401				74	75			37	-1.5
079EQU	GOOD	0	NO	76	77	719.2	717.6	41	-1.4
18116R	GOOD	0	NO	80	77	722.2	719.2	43	-4.3
937JFS	GOOD	0	NO	79	77	724.4	722.2	45	-4.0
672GXG	FAIR	.1	NO	82	79	728.08	726.20	47	-6.5
774JEL	GOOD	0	NO	82	79	730.85	728.08	53	-4.8
041GOA	GOOD	0	NO	82	78	733.18	730.85	41	-4.3
TGT771	GOOD	0	NO	84	78	734.30	733.2	32	-3.1
862JQT	GOOD	0	NO	85	78	736.40	734.30	43	-1.6
422HOS	GOOD	0	NO	85	78	738.88	736.40	41	-7.0
738JLA	POOR	.2	NO	80	77	740.46	738.88	40	-3.8
072FKX	GOOD	0	NO	82	77	741.70	740.46	43	-3.5
689ESK	N.A.	N.A.	NO	82	77	742.92	741.70	34	-10.0
613KAC	GOOD	0	NO	84	78	745.23	742.92	37	-8.0

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/11/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
43 204 U	POOR H/H	.2	NO	93	78	746.84	745.28	34	-1.0
799JEH	BAD H/H	1.0+	NO	90	78	748.82	746.84	30	-3.0
RJP777	GOOD H/H	.1	YES MINIMUM	88	77	750.70	748.82	35	-0.5
450ETV	GOOD	0	NO	84	77	753.54	750.70	42	-6.5
059GJX	GOOD	0	NO	86	77	755.94	753.54	41	-7.0
299HWV	GOOD	0	NO	84	76	266.2	264.8	50	-8.0
211FYZ	GOOD	.6	NO	85	80	269.5	266.2	45	-3.5
WLN696	GOOD H/H	0	NO	78	80	271.6	269.5	40	-6.0
WBF900	GOOD H/H	.1	NO	79	81	273.3	271.6	40	-2
1DDL1221	GOOD	0	NO	81	81	273.9	273.3	35	-2.5
137GXA	GOOD	0	NO	78	80	275.72	273.92	35	-5.5

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
1043376	GOOD	0	NO	0	68	73	753.64	752.72	58	+0.2
711KLQ	POOR	1.0+	NO	0	70	74	754.64	753.76	58	0.0
12831R	POOR	1.0+	YES	1-2OUNCES	68	75	756.44	754.80	58	0.0
72506W	POOR	1.0+	NO	0	70	74	757.70	756.44	62	0.0
603GBY	POOR	1.0+	NO	0	72	75	757.22	756.70	51	0
TRN863	GOOD	0	NO	0	72	74	756.48	755.28	56	+ .3
312HP0	POOR	-	NO	0	72	75	755.80	755.20	58	+ .2
000D20	GOOD	0	NO	0	72	74	755.26	754.52	62	0
1170078	POOR	1.0+	NO	0	72	75	754.92	754.28	62	0
903DSM	GOOD	0	NO	0	72	75	754.84	754.20	62	0
K0Y327	POOR	.4	NO	0	70	72	748.00	747.42	56	+ .20
162DVQ	BAD	1.0+	NO	0	70	74	748.74	748.00	60	+ .40
205JRT	GOOD	0	NO	0	70	74	749.50	748.72	65	+ .3
264FNL	GOOD	0	NO	0	72	76	749.90	749.50	64	+ .2

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
60421F	POOR	1.0+	NO	0	72	74	750.12	749.90	60	+.3
446JEC	BAD	.1	NO	0	72	75	751.00	750.12	63	.2
526GGC	GOOD	1.0	NO	0	72	75	752.82	751.00	62	.4
236KLM	GOOD H/H	0	NO	0	76	75	753.62	752.82	72	.3
101ASI	BAD	1.0+	NO	0	74	74	753.62	753.62	49	+.2
653F8X	GOOD	0.02	NO	0	80	74	754.50	753.56	69	+.30
ZQD792	BAD	1.0	NO	0	72	75	754.4	754.50	70	+.3
V29741	GOOD	0	NO	0	72	75	756.8	754.64	63	+.3
RGD594	GOOD	0	NO	0	76	76	757.20	756.18	63	+.4
86394E	GOOD	0	NO	0	74	76	757.46	757.20	63	+.2
689DLX	BAD	1.0+	NO	0	74	76	758.84	757.46	63	+.5
550KPG	BAD H/H	1.0+	NO	0	72	75	759.20	758.84	67	0
611GGS	GOOD	0	NO	0	74	75	759.94	759.20	65	+.3
148HDT	BAD	1.0+	NO	0	70	75	760.0	759.94	65	+.15

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
37498W	BAD H/H	1.0+	NO	0	70	75	761.66	760.0	67	+.2
159KZQ	BAD H/H	1.0+	NO	0	70	75	761.60	761.66	67	+.18

STATION: GULF		PROCESS: GULF BALANCED		LOCATION: UNIVERSITY + BOUNDARY				DATE: 6/13/74	
LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET.
						AFTER	BEFORE		PRES
Q72787	FAIR	1.0	NO	72	78	771.13	770.92	62	+.20
78784L	GOOD HANDHELD	0	NO	72	74	771.78	771.13	62	+.25
105HDT	GOOD HANDHELD	0	NO	72	74	772.52	771.78	67	+.23
93229G	GOOD HANDHELD	0	NO	72	74	773.64	772.50	67	+.17
QMV785		N.D.	NO	72	74	774.56	773.64	62	+.17
754KLS	FAIR	1.0	NO	72	74	775.33	774.44	63	+.14
TET248	POOR HANDHELD	1.0	NO	72	74	776.12	775.32	62	+.25
999DUH	FAIR HANDHELD	.5	NO	72	74	777.49	776.12	63	+.28
KUL605	FAIR HANDHELD	1.0	YES 50 ML.	72	74	778.37	776.49	66	+.24
909JSZ	FAIR HANDHELD	1.0+	NO	72	74	778.96	778.37	67	+.18
45280L	POOR HANDHELD	1.0+	NO	72	74	779.90	778.96	62	+.40
376DFJ	N.D.		YES 5CC	72	74	780.20	779.89	63	+.1
668KHV	POOR	1.0	NO	72	74	781.30	780.20	66	+.24
TXG714	POOR HANDHELD	1.0+	NO	72	76	781.90	781.40	65	+.18

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET.
						AFTER	BEFORE		PRES
OUM753	FAIR HANDHELD		NO	75	76	782.00	781.90	63	+ .18
0238796	FAIR	1.0+	NO	72	74	782.96	782.00	63	+ .20
735GOW	POOR	1.0+	NO	68	74	784.22	784.12	63	0
288BEX	GOOD	.1	NO	73	74	785.11	784.22	67	+ .23
VEU721	FAIR	1.0	NO	73	75	786.55	785.11	63	+ .18
U40716	GOOD	0	NO	73	74	786.37	786.55	65	- .2
87764N	FAIR	1.0+	NO	73	74	788.12	786.37	65	+ .30
122DFK	GOOD	0	NO	73	75	788.34	788.12	62	+ .1
247ADR	GOOD	.3	NO	75	74	790.48	789.94	65	+ .14
TTF-876	FAIR	1.0	NO FEW DROPS	75	74	792.20	790.46	65	+ .11
585GBT	GOOD HANDHELD	.1	NO	75	74	792.50	792.20	65	+ .14
XTL389	FORCED HANDHELD	.95	NO	75	74	793.95	792.47	63	+ .3
89461L	POOR HANDHELD	1.0	NO	75	74	793.80	793.80	63	+ .1
OZT057	POOR	1.0+	NO	75	74	793.85	793.80	63	0

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/13/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET. PRES
							AFTER	BEFORE		
86467P	GOOD	0	NO		75	74	795.74	793.84	65	+.1
728FEA	FORCED FIT	0	NO		75	74	798.01	797.03	66	+.14
TST284	NONE	1.0+	NO	0	78	76	320.1	320.0	54	-.05
H54055	BAD	1.0+	NO	0	77	76	321.90	320.15	55	+.2
7410ZE	BAD	1.0+	NO	0	76	76	321.90	321.90	54	+.1
534BXV	BAD	1.0+	NO	0	76	75	322.18	321.90	59	+.15
743CTT	FAIR	1.0	NO	0	75	74	322.64	322.18	55	+.46
7350QK	GOOD	1.0+	NO	0	75	74	323.28	322.64	55	+.25
103AFD	GOOD	0.3	NO	0	75	75	324.52	323.28	58	+.2
587KAC	BAD H/H	1.0	NO	0	75	74	325.00	324.52	60	+.1
TAA480	BAD H/H	0	NO	0	75	75	326.34	325.00	58	.25
049DZN	BAD H/H	1.0+	NO	0	73	75	327.22	326.34	59	+.2
378GNZ	GOOD	0	NO	0	76	74	332.2	330.8	63	+.3
508KHV	BAD	1.0	NO		73	74	332.6	332.6	63	-.1

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/13/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
389CEC	GOOD	7	NO	0	73	74	333.45	332.60	60	+ .4
58278S	GOOD	0	NO	0	73	74	334.00	333.45	61	+ .3
ZRDLR2733	GOOD H/H	0	---	-----	77	74	334.30	334.00	60	+ .2
VNM013	BAD	1.0	NO	0	74	74	334.36	334.30	62	+ .1
FQA058	FAIR	.9	NO	0	76	74	335.10	334.36	70	+ .5
962GAP	GOOD	0	NO	0	78	74	335.14	335.10	63	- .1
22647D	GOOD	1.0+	NO	0	74	74	338.18	335.14	68	+ .5
0ZN598	POOR	1.0	NO	0	75	74	339.90	339.32	77	+ .1
111KLP	GOOD	0	NO	0	81	74	341.72	340.00	72	+ .2
286KPH	BAD	1.0	NO	0	75	74	341.80	341.72	76	+ .1
RBA634	BAD	1.0+	NO	0	76	75	342.74	342.34	75	-0.0
469HDR	BAD	1.0+	NO	0	73	74	342.75	342.74	77	- .1
LZA573	POOR	1.0+	NO		75	74	342.75	342.75	75	0
140EAV	GOOD H/H	0	NO	0	76	75	343.92	342.75	77	+ .5

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
48457W	GOOD H/H	0	NO	0	76	75	346.10	343.92	76	+.3
WRY045	POOR	1.0	NO	0	73	74	346.14	346.10	74	+.1
X0R052	POOR	1	YES	10CC	00	70	768.58	768.60	46	0
228KZC	POOR	1.0+	NO		66	71	768.28	768.24	48	+.18
206ANU	HAND HELD.	1.0	NO		72	74	768.40	768.30	56	0
46729P	FAIR	1.0	NO		72	76	769.06	768.40	59	+.1
VSL427	FAIR	1.0	NO		72	76	769.40	769.06	58	+.2

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
76625H	BAD	1.0+	NO	62	73	799.00	799.00	27	0
603GBY	GOOD FORCE FIT	0	NO	66	75	799.56	799.00	64	+0.25
XWE767	BAD HANDHELD	1.0+	NO	66	78	800.64	799.56	64	0.30
E82646	BAD	1.0+	NO	68	79	801.08	800.64	64	+0.20
130HQE	BAD	1.0+	NO	68	75	801.08	801.08	64	0
312HP0	GOOD FORCE FIT	0	NO	68	78	802.30	801.08	67	0.3
045CWF	POOR	1.0+	NO	70	78	802.62	802.30	65	0.20
12831R	GOOD FORCE FIT	0	NO	70	78	803.16	802.62	64	+0.20
32391E	FAIR HANDHELD	0.2	NO	70	80	805.18	803.14	67	+0.6
049FNU	GOOD FORCE FIT	0	NO	70	80	805.54	805.18	62	+0.20
811HSD	GOOD	0	N	72	79	806.10	805.54	67	+0.3
44053F	GOOD	1.0+	NO	72	79	806.22	806.10	63	+0.20
700KFC	GOOD	0	NO	72	78	806.22	806.08	74	0
724CTU	GOOD	0.2	NO	72	78	807.24	806.20	70	+0.40

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
P29192	GOOD HANDHELD	0	NO	72	76	809.20	807.24	70	+0.40
680G0C	GOOD FORCE FIT	0	NO	74	76	810.56	809.20	70	0
DZN800	BAD	1.0+	NO	74	76	810.64	810.56	63	+0.18
379HMM	GOOD	0	NO	72	76	812.28	810.64	72	0
GREATE	FAIR	0.8	NO	74	76	813.08	812.28	72	0
105JSX	FAIR	0.55	NO	74	76	814.84	813.08	72	+0.20
00J977	POOR HANDHELD	0.25	NO	74	76	815.44	814.84	72	+0.20
UZA117	GOOD	.11	NO	74	76	815.44	815.44	72	+0.02
045GXH	BAD HANDHELD	1.0+	NO	74	76	815.44	815.44	71	0
BTJ-788	BAD	0.3	NO	74	76	815.44	815.44	70	+0.03
RQX808	BAD HANDHELD	0.55	NO	74	76	815.70	815.44	72	+0.10
WTK414	GOOD	0	NO	74	76	817.10	816.72	71	+0.20
060HZL	POOR	0.3	NO	74	76	817.10	817.10	71	0
554COA	BAD HANDHELD	1.0+	NO	74	76	817.40	817.40	69	0

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET.	
						AFTER	BEFORE		PRES	
TWA441	BAD	1.0+	NO	74	76	817.42	817.40	69	0	
36-0699	BAD	1.0+	NO	74	76	818.52	817.42	70	0	
M12136	GOOD	0	NO	74	76	818.96	818.52	70	+ .2	
ZZW270	BAD	1.0+	NO	74	76	818.96	818.96	70	- .02	
373COR	FORCE	.1	NO	74	76	819.78	818.96	70	+ .3	
235JEG	BAD	1.0	NO	74	76	819.78	819.78	72	+ .05	
OZV830	GOOD	0	NO	74	80	819.78	819.78	72	- .3	
916CFV	GOOD	0	NO	74	80	821.06	820.04	73	+ .15	
632AVL	BAD	1.0+	NO	74	80	821.06	821.06	73	+ .04	
VIX957	FORCE FIT HAND	0	NO	76	80	821.18	821.06	73	+ 0	
KPP346	BAD	1.0+	NO	0	74	80	821.9	821.1	73	+ .10
WJX321	BAD	1.0+	YES	TABLESPOON	76	80	823.00	821.90	70	0
RSS989	GOOD FORCE FIT	0	NO	0	76	80	823.78	823.00	70	+ .30
WBF424	FAIR	.1	NO	0	74	78	823.86	823.78	67	+ .10

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK		VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET. PRES
							AFTER	BEFORE		
77111R	BAD	1.0+	YES	TABLESPOON	76	79	823.86	823.86	69	+.01
756CYD	BAD	1.0+	NO	0	76	79	823.88	823.86	69	0
XND019	GOOD	1.0+	NO	0	76	79	824.64	823.88	72	+.15
0233401	GOOD	.2	NO	0	78	79	825.62	824.64	70	+.15
TV5029	POOR	1.0+	YES	SLIGHT	78	79	825.66	825.62	70	0
VEP825	POOR	1.0	NO	0	78	79	826.60	825.66	73	0
WIW853	BAD	1.0+	NO	0	78	79	826.60	826.60	73	-.2
XVD904	POOR	1.0+	NO	0	80	79	826.66	826.64	72	-.20
804GJD	POOR	1.0+	NO	0	80	79	826.66	826.66	70	-.2
624EOY	GOOD	1.0+	NO	0	80	79	829.70	828.02	67	.0
VES152	BAD	1.0+	NO	0	84	79	829.76	829.70	56	-.01
432GJH	GOOD	.8	NO		74	79	361.15	360.10	45	-.2
RDJ199	POOR	0.1	NO	SPIILLED DR	75	78	361.80	361.64	67	+.1
XOR989	HAND HELD	1.0+	NO		73	78	362.02	361.80	69	-.1

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
XVC286	BAD	1.0+	NO	76	78	362.02	362.02	63	+.2
093GFK	GOOD	.4	NO	74	78	362.88	362.02	68	.15
117KPH	BAD	1+	NO	76	79	362.88	362.88	64	+.2
0V9512	GOOD	0	NO	75	79	363.0	362.88	66	+.4
232GSN	BAD	1.0+	NO	76	79	363.02	363.00	72	0
KTR796	POOR HANDHELD	1.0+	NO	77	77	363.89	363.02	73	+.4
216KXG	GOOD	1.0	NO	78	79	364.56	363.89	72	-.1
EHY401	GOOD	1.0+	NO	77	80	365.08	364.06	76	+.40
265KXL	GOOD	1.0+	NO	76	80	366.10	365.76	78	+.1
870BML	POOR	1.0+	NO	75	80	366.25	366.1	81	0
225HQB	GOOD	.1	NO	77	80	366.67	366.25	75	-.1
77263V	GOOD	1.0+	NO	00	80	366.70	366.67	78	+.1
78059V	GOOD	.1	NO	00	80	368.60	366.70	73	+.4
SMI602	GOOD	.2	NO	00	80	370.14	368.60	71	+.3

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
TVW744	NONE	1.0+	NO	77	80	370.14	370.14	71	0
281BIJ	GOOD	0	NO	76	80	372.67	371.62	72	-.4
KSU028	POOR HANDHELD	.1	NO	79	80	374.00	372.60	65	-.4
962GAP	GOOD	.2	NO	78	80	375.56	374.00	66	-.4
TXG511	POOR	1.0+	NO	81	80	375.58	375.56	67	-0

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
449JEL	GOOD	.1	NO	70	76	376.88	376.12	00	-.1
44763S	GOOD H/H	0	NO	70	76	376.12	375.58	00	-.2
359KZC	BAD H/H	1.0+	NO	75	76	378.22	376.88	54	-.1
918KKL	GOOD H/H	0	NO	78	76	380.78	378.22	63	-.1
730HNF	BAD H/H	1.0+	NO	78	77	381.94	380.78	66	-.1
89046N	POOR H/H	1.0+	NO	76	76	384.28	382.00	62	-.14
WSU778	POOR	1.0+	NO	79	77	384.70	384.33	61	-.25
932HWN	GOOD FORCE FIT	00	NO	75	77	385.70	384.70	62	-.2
549JLB	POOR H/H	1.0+	NO	74	77	386.06	385.70	61	-.15
XXX	GOOD FORCE FIT	0.0	NO	74	78	386.44	386.10	55	-.1
574KMK	GOOD FORCE FIT	0.0	NO	78	79	387.00	386.45	68	-.18
205JRT	GOOD	0	NO	77	78	388.01	387.00	68	-.2
694HDP	POOR	1.0+	NO	83	78	388.90	389.01	54	-.2
15874V	BAD	1.0+	NO	76	78	834.99	833.04	62	.01

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
292G0Z	BAD	1.0+	NO	78	80	834.65	834.99	65	0.2
545HTC	GOOD	0	NO	78	82	836.94	835.26	75	-.18
570CYM	POOR	1.0+	NO	78	78	839.11	836.94	73	-.05
V28979	FAIR HANDHELD	.6	NO	76	82	839.82	839.12	63	0
786KX0	POOR	1.0+	NO	78	81	841.11	839.82	78	+.2
012J0H	GOOD HANDHELD	0	NO	77	80	841.50	841.12	76	-0.22
VNX430	FAIR HANDHELD	.8	NO	77	80	842.50	841.50	70	-.2
315KZB	POOR	1.0+	NO	77	84	844.51	842.50	75	-.18
519KZE	GOOD	0	NO	77	83	846.50	844.51	75	-.16
DUL602	GOOD H/H	0	NO	77	83	846.50	846.50	72	-.2
ZQM799	POOR H/H	.3	NO	73	84	847.70	846.50	78	.0
590BAG	FAIR	.40	NO	75	79	847.87	847.70	78	-.3
675EAU	POOR H/H	1.0+	NO	75	80	849.14	847.87	76	-.2
228LKY	POOR	1.0+	NO	75	76	849.43	849.14	75	-.2

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
295KQQ	POOR	1.0	NO	78	78	851.59	851.52	81	-.21

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET. PRES
						AFTER	BEFORE		
597DNY	POOR	1.0+	NO	68	78	853.28	853.27	46	-.28
915HWP	FAIR	1.0+	NO	75	78	855.95	853.28	56	+.05
751GGX	FAIR	0.40	NO	76	78	858.18	855.95	53	0
427KQR	FAIR	0.30	NO	76	76	860.88	858.18	53	-.18
172FVP	GOOD	0	NO	76	75	861.73	860.88	53	-.18
031H01	POOR	1.0+	NO	76	76	863.95	861.76	55	-.20
074K05	FAIR	0.42	NO	76	79	865.28	863.95	56	-.15
679GTH	GOOD	.1	NO	74	79	868.06	865.28	55	-.15
903KLW	POOR HAND HELD	1.0+	NO	78	79	868.30	868.10	56	-.2
678GUP	BAD	1.0+	NO	76	80	869.04	868.30	64	-.10
572FFR	POOR HAND HELD	.9	NO	76	80	870.15	869.05	64	0
082JDK	POOR HAND HELD	1.0+	NO	78	80	870.38	870.15	64	-0.27
311JLE	GOOD	0	NO	78	79	871.60	870.38	72	-.22
723HFP	GOOD FORCE FIT	0	NO	77	78	872.43	871.60	70	-.2

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
ZND264	POOR FORCE FIT	1.0 +	NO	78	78	873.78	872.43	65	-.17
701BLK	POOR FORCED FIT	1.0	NO	77	78	874.92	873.78	69	-.20
SPOOK J	FAIR	1.0	NO	77	78	876.75	874.92	64	-.17
438CTY	POOR	1.0 +	NO	77	78	877.42	876.75	67	-.15

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET.
							AFTER	BEFORE		PRES
0388293	POOR HAND HELD	1.0+	YES	TABLE-SPOO	62	75	395.36	394.28	47	-.15
170FTD	POOR HAND HELD	1.0+	NO		63	75	395.88	395.36	27	-.12
842G0Z	POOR HAND HELD	1.0+	NO		61	74	395.92	395.91	36	-.04
645KZR	GOOD	1.0+	NO		64	74	398.36	395.92	56	-.02
603ESM	POOR OPEN ON TP	1.0+	NO	0	65	75	399.20	398.48	55	-.15
399CQQ	POOR HAND HELD	1.0+	NO	0	68	75	400.04	399.20	57	-.15
NOZ707	HAND HELD		NO	0	72	77	402.54	401.26	54	-.03
545HTC	GOOD HAND HELD	0	NO	0	72	78	404.06	402.80	63	-.1
103AFM	POOR	1.0+	NO	0	68	79	405.00	404.06	62	+.03
239CTV	POOR HAND HELD	1.0+	NO	0	69	79	406.32	405.00	68	-.1
61157827	POOR	1.0	NO		62	80	877.67	877.42	47	-.45
260KZE	NOT TAKEN		NO		72	79	878.92	877.75	49	-.40
405JYC	GOOD FORCE FIT	0	NO		72	78	881.24	878.94	56	-.22
302JQU	FAIR	1.0	NO		73	78	883.25	881.24	53	-.03

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
F42556	POOR	1.0+	NO	76	82	883.64	883.25	51	-.3
545JSK	POOR	1.0+	NO	76	82	883.88	883.64	52	-.3
603GBY	GOOD FORCE FIT	0	NO	74	80	884.51	883.88	49	-.18
038KOR	POOR HAND HELD	1.0	NO	76	82	884.55	884.51	56	-.38
UUP088	POOR	1.0+	NO	76	81.5	885.75	884.55	56	-.18
438JUA	GOOD FORCE FIT	0	NO	74	83	886.90	885.84	58	-.19
999HGP	GOOD FORCE FIT	1.0+	NO	74	80	889.30	888.54	62	-.21
338JQN	GOOD	0	NO	74	76	890.98	889.30	56	-.1
907KES	GOOD HAND HELD	1.0+	NO	75	78	891.92	890.88	58	-.1
574KMK	GOOD	0	NO	74	76	894.40	893.20	67	-.19
122JQV	GOOD FORCED FIT	.2-.5	NO	75	76	895.25	894.40	67	-.22
105HDT	GOOD FORCE FIT	0-.2	NO	75	78	897.36	896.30	65	-.30
RKP800	POOR FORCE FIT	1.0+	NO	75	77	898.02	897.70	65	-.18
534KZR	POOR	1.0+	NO	74	77	898.30	898.02	66	-.29

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET. PRES
						AFTER	BEFORE		
PHP979	GOOD HAND HELD	0	NO	74	78	898.50	898.30	64	-.18
UNP684	POOR	1.0+	NO	76	78	898.84	898.50	67	-.3
033KZB	POOR	1.0+	NO	78	78	899.54	898.84	67	-.21
RSK421	POOR HAND HALD	1.0+	NO	78	78	899.74	899.54	67	-.21
90487L	GOOD	1.0+	NO	78	77.5	901.30	899.75	68	-.19
KKG377	FAIR	1.0+	NO	78	78	901.32	901.30	70	-.28
240FFS	FAIR	1.0+	NO	76	78.5	901.65	901.35	65	-.25

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
6518EB	HAND HELD	.4	NO	76	76	000.00	000.00		-18
124ELL		0	NO	77	76	953.92	942.20	31	-18
623HTS		0	NO	75	77	959.30	954.9	12	-21
PWA684		0	NO	74	77	975.30	963.80	15	-24
THE7K		0	NO	79	77	981.60	976.00	28	-24
48825L		0	NO	77	78	995.8	994.5	9	-24
WYM088	GOOD H/H	0	NO	00	80	50.89	48.1	17	-24
WJU456		0	NO	81	78	68.98	51.50	31	-24.5
770KLB		1.0	NO	82	79	105.58	081.28	24	-21.5
305HDS		0.0	YES 20CC	74	78	120.10	107.00	19	-24.0
WSC130	H/H	0.4	NO	84	78	146.90	142.90	8	-25
STEAM2	H/H	0	NO	83	78	155.60	151.10	15	-25
MW1510		0	YES 2-5CC	76	76	488.99	464.70	17	-20.0
93353G	HAND HELD	.1-.4	YES 20CC	80	76	500.82	491.66	16	-24.5

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
314GXE		0	NO DRIPS	80	77	530.04	514.99	16	-24.5
PHB110		1.0	NO	80	77	532.28	530.04	19	-24.5
662FZG		1.0+	NO	80	77	545.87	532.28	12	-24.0
384KLQ	HAND HELD	0	NO	80	78	547.35	545.87	16	-24.0
77458U	HAND HELD	-1.0	NO	80	78	550.40	547.44	18	24.5
DYN439		0	NO	80	78	559.36	550.52	18	-24.0
53013L		0	NO	82	78	566.70	559.36	25	-24.5
571HDT		0	NO	82	78	579.45	566.70	12	-24.0
496JQS	HAND HELD	1.0+	NO	82	78	582.18	579.45	17	-24.0
14382R		0	NO 1 CC	82	78	597.07	582.18	15	24.0
37778W	HAND HELD	1.0+	NO	82	78	599.86	597.23	8	-24.0
UKW764		0	NO	82	78	606.47	600.00	12	-19.0
ZXM782		0	NO	82	78	638.82	628.38	15	-24
963GOY	HAND HELD	1.0	NO	80	78	638.82	632.95	19	-27.0

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM	VAPOR VOLUM	VAP. CONC	VAP. RET.
							AFTER	BEFORE		PRES
973JQP	HAND HELD	----	NO	SPOONFULL	82	78	637.52	633.38	23	-24.0
FPN866	HAND HELD	1.0+	YES	10CC	80	78	650.70	637.52	13	-23
234HKK	HAND HELD	0	NO		82	78	653.20	650.70	16	-19
716KPH	HAND HELD	0	NO	0	82	78	656.32	653.02	13	-24.0
744GOX	HAND HELD	0	NO	0	82	78	663.18	657.14	16	-19.0
760BSB		0	YES	50CC	82	78	673.40	664.90	18	-24.0
444JLC	HAND HELD	.5	NO	0	82	78	683.56	678.94	10	-24.0
SNP596		0	NO	0	82	78	693.60	683.70	17	-24.0
475KLX		0	NO	0	80	78	723.08	696.00	14	-24.0
46287P		1.0	NO	0	80	78	746.00	723.08	27	-24.5
726FVX		0	NO	0	80	78	758.20	746.00	15	-20.5
785JLA		1.0	NO	0	76	78	765.12	758.24	14	-24.0
TAM267		0	NO	0	78	78	768.52	765.14	4	-17.5
AZV456	HAND HELD	0	NO	0	80	78	771.60	768.62	15	-24.0

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
KOW808			NO	0	80	78	773.40	771.62	4	-24.0
17662T	HAND HELD	1.0+	NO	0	78	78	777.02	773.42	13	-24.5
20263T	HAND HELD	1.0+	YES	CUPFULL	80	78	781.76	777.02	15	-24.5
400JSJ	HAND HELD	0	NO	0	84	78	788.60	783.72	5	-21.5
WAC301	HAND HELD	0	NO	0	82	78	794.20	790.40	19	-24.0
TCB765	HAND HELD	0	NO	0	78	78	797.56	794.24	15	-21.0
710KLT	HAND HELD	0	NO	0	80	78	800.30	797.56	19	-24.0
731ELS		0	YES	1 TSP	80	78	807.70	800.30	19	-24.0
398DLD	HAND HELD	0	NO	0	80	78	810.14	807.72	19	-24.0
Q81070	HAND HELD	1.0+	NO	0	82	78	813.76	810.26	12	-17.5
VNV049	HAND HELD	0	YES	1 TSP	82	78	827.10	813.80	14	-24.0
KGS913	HAND HELD	0	NO	0	82	78	835.62	827.32	16	-24.0

STATION: UNION 76

PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/24/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT BACK	AMOUNT	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
960KZD	HAND HELD POOR	1.0	NO	0	68	77	817.92	817.38	38	-5.5
L36087	GPPD	0	YES	1TBSP	69	83	820.78	817.92	45	-5.5
609677	GOOD	0	NO	0	71	79	823.42	820.78	41	-3.4
72085W		0	NO	0	68	77	823.94	823.44	41	-3.5
955KLP	HAND HELD	0	NO		71	78	825.03	823.94	42	-6.0
DE REEN	GOOD	0.	NO		73	79	827.77	825.03	45	-6.0
TAC138	GOOD	0	NO		71	79	830.85	827.77	50	-8.4
RUU488	GOOD	0	YES	500	71	78	833.43	830.88	41	-6
866DND	HAND HELD POOR	1.0+	NO	0	71	79	835.30	833.42	38	-3.4
233HMS	GOOD	0	NO		71	79	837.70	835.32	54	-9.9
680GOC	GOOD	0	NO	0	78	79	840.83	837.70	58	-11.1
14022V	GOOD	0	NO		78	79	843.67	840.83	56	-7.8
833FVQ	GOOD	0	YES	1000	80	80	847.29	843.67	50	-3.6
350GOB	GOOD	0	NO		82	80	849.83	847.30	56	-8.5

STATION: UNION 76

PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/24/74

LICENSE NUMBER	NOZZ FIT	EXPL. VALUE	SPIT AMOUNT BACK	VAP. TEMP	LIQ. TEMP	VAPOR VOLUM AFTER	VAPOR VOLUM BEFORE	VAP. CONC	VAP. RET. PRES
455CTV	GOOD	0	NO	80	76	851.88	849.83	45	-4.0
73146W	GOOD	0	NO	80	76	854.08	851.88	64	-9.0
WYL423	BAD	1.0+	YES	80	76	857.42	854.12	43	-3.9
OVC759	HAND HELD GOOD	0	NO	88	76	858.14	857.46	65	-2.8
0238947	HAND HELD GOOD	0	NO	88	76	859.32	858.14	30	-3.6
WCMSLM	GOOD HAND HELD	0	NO	83	76	860.90	859.32	50	-8.0
994CFV	GOOD	0	NO	00	00	862.39	860.91	53	00

APPENDIX C-3
PERFORMANCE CALCULATIONS

STATION: STANDARD PROCESS: INTERMARK LOCATION: CARMEL VALLEY + I5 DATE: 6/ 6/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
932HWN	6.10	6.05	2.74	6.60	-8.00	165.86	10.05	-11.00
080EAT	1.90	1.88	1.90	10.83	*99.99	55.53	7.50	*99.99
242CTX	3.20	3.17	3.29	10.29	-7.00	93.34	12.96	-9.00
13584R	2.70	2.67	2.00	10.17	-13.00	75.30	7.59	-15.00
E830974	3.40	3.31	1.78	13.45	13.00	95.81	6.89	10.00
55865F	4.40	4.31	1.85	10.44	-1.00	124.76	7.17	-4.00
874FLS	4.60	4.48	1.79	11.11	1.00	132.10	7.06	-2.00
C9809	1.20	1.17	1.30	8.04	21.00	30.17	4.50	19.00
059KFQ	6.20	6.09	3.64	7.50	17.00	169.94	13.60	15.00
VCL446	2.80	2.73	2.41	6.54	-9.00	73.54	8.65	-11.00
YYG563	5.70	5.55	2.40	6.70	1.00	160.31	9.30	-1.00
GQP810	2.00	1.97	1.78	11.07	-3.00	57.10	6.88	-5.00
60969	5.10	5.00	2.77	6.69	16.00	139.71	10.35	14.00
92402X	4.80	4.73	2.72	6.90	8.00	141.84	10.91	6.00

STATION: STANDARD PROCESS: INTERMARK LOCATION: CARMEL VALLEY + I5 DATE: 6/ 6/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
96695E	4.00	3.94	2.00	11.45	5.00	129.23	8.72	3.00
XYV086	4.00	3.91	1.81	11.36	-6.00	129.30	8.03	-8.00
R27816	4.20	4.15	2.50	10.63	-1.00	137.21	11.07	-3.00
TUCKIE	1.40	1.38	2.95	10.50	7.00	45.68	13.05	5.00
950DVE	3.40	3.33	2.65	6.88	15.00	103.28	10.99	13.00
VWA636	1.30	1.27	2.72	5.83	5.00	37.54	10.72	4.00
026BHA	4.30	4.22	2.56	6.71	13.00	126.50	10.28	11.00
248ACV	1.10	1.07	1.30	6.76	0.00	32.22	5.20	-2.00
588YHU	3.60	3.54	1.97	10.58	1.00	117.02	8.73	-1.00
029ESQ	2.30	2.26	2.04	10.60	2.00	74.86	9.02	0.00
2LX232	3.30	3.26	2.77	6.36	1.00	97.64	11.10	-1.00
838GOA	3.50	3.43	1.82	12.26	14.00	113.49	8.05	12.00
830HPA	3.00	2.89	2.43	6.85	0.00	104.72	11.77	-2.00
651FVR	2.80	2.72	2.55	6.86	3.00	87.28	10.91	1.00

STATION: STANDARD PROCESS: INTERMARK LOCATION: CARMEL VALLEY + I5 DATE: 6/ 6/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
829360	4.60	4.53	2.25	11.33	14.00	150.09	9.94	12.00
902DBT	3.80	3.74	2.01	11.12	8.00	116.16	8.36	6.00
73438M	3.20	3.15	2.07	11.21	0.00	102.78	9.02	-2.00
18354V	2.80	2.74	2.53	6.94	9.00	85.05	10.50	7.00
HMX668	2.40	2.37	2.04	4.79	-2.00	76.00	8.74	-4.00
XDU752	3.40	3.34	1.72	11.15	11.00	114.12	7.87	9.00
296KBI	6.80	6.62	2.58	6.86	17.00	198.66	10.35	15.00
SKE220	2.80	2.74	2.38	6.97	3.00	84.89	9.87	1.00
4152	6.20	6.04	2.58	3.65	18.00	184.26	10.53	16.00
4152	7.80	7.61	4.59	3.74	27.00	244.05	19.68	25.00
136LEC	2.80	2.77	2.14	14.55	23.00	91.76	9.46	21.00
329HQA	4.10	4.03	1.60	11.28	9.00	139.52	7.42	7.00
CUD923	3.40	3.32	2.76	6.51	9.00	101.23	11.25	7.00
T0528697	2.70	2.64	2.59	6.81	7.00	77.72	10.23	5.00

STATION: STANDARD PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + I5

DATE: 6/ 6/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
406DKA	2.90	2.82	2.25	6.96	6.00	89.11	9.48	4.00
2288Q1	4.40	4.35	3.28	7.42	-5.00	139.34	14.07	-7.00
T0934996	3.50	3.61	2.78	4.85	3.00	111.90	11.54	1.00
372KLS	2.30	2.22	2.44	6.80	1.00	67.74	9.96	-1.00
D2T709	5.40	5.25	2.83	6.67	1.00	162.91	11.72	-1.00
447DKC	2.90	2.83	2.86	6.83	7.00	83.43	11.27	5.00
XUV484	3.50	3.45	2.93	6.86	-3.00	106.99	12.16	-5.00
016JRX	5.00	4.89	2.73	6.81	9.00	146.62	10.94	7.00
ZND264	3.80	3.95	2.19	9.53	1.00	122.63	9.08	-1.00

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/11/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
ZMR401	*99.99	*99.99	*99.99	*99.99	-2.00	*9999.99	*9999.99	-4.00
079EQU	1.60	1.58	1.25	6.27	6.00	33.44	3.56	2.00
18116R	3.00	2.91	1.19	7.32	1.00	64.81	3.54	-3.00
937JFS	2.20	2.14	1.03	6.99	5.00	49.87	3.22	1.00
672GXG	1.88	1.81	1.00	6.53	8.00	43.99	3.23	2.00
774JEL	2.77	2.68	1.09	6.27	-1.00	73.40	3.99	-7.00
041G0A	2.33	2.26	1.12	5.63	5.00	47.82	3.19	0.00
TGT771	1.10	1.06	1.50	3.53	4.00	17.61	3.32	-1.00
862JQT	2.10	2.04	1.29	8.05	6.00	45.26	3.84	1.00
422HOS	2.48	2.37	.95	7.44	13.00	50.29	2.70	8.00
738JLA	1.58	1.54	1.47	8.21	5.00	31.79	4.08	1.00
072FKX	1.24	1.20	1.01	7.63	18.00	26.74	3.00	14.00
689ESK	1.22	1.16	.98	7.12	23.00	20.47	2.30	19.00
613KAC	2.36	2.26	1.12	7.81	8.00	43.15	2.86	3.00

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/11/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
43 204 U	1.56	1.49	1.12	4.62	18.00	26.25	2.62	13.00
799JEH	1.98	1.90	1.45	7.54	8.00	29.40	3.00	3.00
RJP777	1.88	1.82	1.13	5.22	15.00	32.89	2.74	11.00
450ETV	2.84	2.72	.97	6.63	10.00	59.17	2.82	6.00
059GJX	2.40	2.29	.84	6.80	11.00	48.58	2.38	7.00
299HWV	1.40	1.34	1.04	6.40	8.00	34.59	3.60	5.00
211FYZ	3.30	3.18	1.58	6.25	4.00	74.08	4.91	-3.00
WLN696	2.10	2.04	1.44	7.95	11.00	42.18	3.98	4.00
WBF900	1.70	1.59	1.45	4.92	6.00	32.89	4.01	-2.00
1DDLR1221	.60	.58	1.25	4.20	11.00	10.58	3.02	3.00
137GXA	1.80	1.75	1.47	6.76	13.00	31.67	3.56	6.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
1043376	.92	.92	.55	5.36	-2.00	27.71	2.22	-2.00
711KLQ	.88	.88	.56	5.45	-9.00	26.40	2.24	-10.00
12831R	1.64	1.65	.68	5.35	-6.00	49.38	2.74	-8.00
72506W	1.26	1.26	.73	4.69	*99.99	40.40	3.13	*99.99
603GBY	.52	.52	.24	5.33	-6.00	13.67	.85	-8.00
TRN863	1.20	1.20	.79	5.70	-6.00	34.65	3.04	-7.00
312HP0	.60	.60	.66	6.58	-6.00	17.94	2.64	-8.00
000020	.74	.74	.50	4.26	3.00	23.64	2.15	2.00
1170078	.64	.64	.42	5.70	6.00	20.45	1.79	4.00
903DSM	.64	.64	.60	5.85	3.00	20.45	2.56	1.00
K0Y327	.58	.58	.76	6.22	2.00	16.81	2.95	3.00
162DVQ	.74	.74	.68	5.47	5.00	22.99	2.80	4.00
205JRT	.78	.78	.83	2.15	8.00	26.24	3.75	7.00
264FNL	.40	.40	.52	6.11	14.00	13.20	2.32	11.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
60421F	.22	.22	.43	5.70	3.00	6.81	1.79	2.00
446JEC	.88	.88	.82	5.65	7.00	28.58	3.57	5.00
526GGC	1.82	1.82	.94	6.00	-3.00	58.20	4.01	-5.00
236KLM	.80	.79	.59	6.00	16.00	29.48	2.95	14.00
101ASI	0.00	0.00	0.00	5.52	13.00	0.00	0.00	12.00
653FBX	.94	.92	.52	5.87	25.00	32.96	2.50	24.00
ZQ0792	-.10	-.10	-.09	5.52	4.00	-3.61	-.45	2.00
V29741	2.16	2.15	1.06	5.88	6.00	70.17	4.62	4.00
RG0594	1.02	1.01	.91	9.05	5.00	32.90	3.96	2.00
86394E	.26	.26	.51	7.60	8.00	8.41	2.21	5.00
689DLX	1.38	1.37	.86	8.40	-3.00	44.69	3.76	-6.00
550KPG	.36	.36	.28	5.70	13.00	12.43	1.31	11.00
611GGS	.74	.74	.80	5.91	6.00	24.71	3.58	4.00
148HDT	.06	.06	.03	9.13	5.00	2.02	.15	3.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
37498W	1.66	1.66	.84	5.92	1.00	57.55	3.89	-1.00
159KZQ	-.06	-.06	-.04	5.75	7.00	-2.08	-.18	5.00

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/13/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
Q72787	.21	.21	.10	6.19	-3.00	6.71	.42	-8.00
78784L	.65	.65	.85	4.89	1.00	20.78	3.65	0.00
105HOT	.74	.74	.65	4.25	13.00	25.56	3.01	12.00
93229G	1.14	1.14	.85	3.53	-3.00	39.37	3.94	-4.00
QMV785	.92	.92	.90	3.80	2.00	29.40	3.87	1.00
754KLS	.89	.89	.73	3.64	2.00	28.90	3.18	1.00
TET248	.80	.80	.69	8.60	1.00	25.57	2.97	0.00
999DUH	1.37	1.37	.71	5.72	15.00	44.50	3.11	14.00
KUL605	1.88	1.87	1.67	5.86	7.00	63.97	7.62	6.00
909JSZ	.59	.59	.44	3.60	16.00	20.38	2.06	15.00
45280L	.94	.94	.70	7.79	-5.00	30.06	3.01	-6.00
3760FJ	.31	.31	.36	6.50	7.00	10.07	1.55	6.00
668KHW	1.10	1.10	.67	5.05	12.00	37.43	3.07	11.00
TXG714	.50	.50	.65	5.43	8.00	16.75	2.94	5.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO	FILL RATE	VEH TANK- UND TANK TEMP	VAPOR MASS	VAP MASS TO DISP LIQ RATIO	VEH TANK- DISP LIQ TEMP
	(CU FT)	(CU FT)	(CF/CF)	(GPM)	(DEG F)	(GM)	(GM/GAL)	(DEG F)
CUM753	.10	.10	.13	4.17	9.00	3.23	.57	6.00
0238796	.96	.96	.72	6.59	11.00	31.18	3.12	10.00
735GOW	.10	.10	.04	5.57	11.00	3.27	.16	10.00
2888EX	.89	.89	.80	5.72	15.00	30.69	3.70	14.00
VEU721	1.44	1.43	.58	5.31	15.00	46.68	2.51	13.00
U40716	-.18	-.18	-.17	5.71	15.00	-6.01	-.76	14.00
87764N	1.75	1.74	.76	5.70	13.00	58.55	3.42	12.00
122DFK	.22	.22	.43	4.15	17.00	7.02	1.85	15.00
247ADR	.54	.54	.31	5.20	10.00	17.99	1.38	9.00
TTF-876	1.74	1.72	.90	5.57	7.00	57.97	4.03	6.00
585GBT	.30	.30	.79	4.20	2.00	10.00	3.57	1.00
XTL389	1.48	1.47	.83	5.50	3.00	47.81	3.60	2.00
89461L	0.00	0.00	0.00	4.56	14.00	0.00	0.00	13.00
OZT057	.05	.05	.04	5.70	13.00	1.61	.17	12.00

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/13/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
86467P	1.90	1.88	.96	3.98	4.00	63.30	4.34	3.00
728FEA	.98	.97	.28	7.01	12.00	33.16	1.29	11.00
TST284	.10	.10	.12	4.00	-9.00	2.75	.46	-12.00
H54055	1.75	1.73	.93	5.56	-9.00	49.17	3.54	-12.00
7410ZE	0.00	0.00	0.00	3.96	8.00	0.00	0.00	5.00
534BXV	.28	.28	.36	3.26	-7.00	8.45	1.48	-9.00
743CTT	.46	.46	.43	5.27	2.00	12.98	1.64	1.00
7350QK	.64	.63	1.08	3.52	-1.00	18.05	4.10	-2.00
103AFD	1.24	1.23	1.03	5.93	-6.00	36.87	4.14	-8.00
587KAC	.48	.48	.94	5.07	1.00	14.76	3.88	0.00
TAA480	1.34	1.33	.82	6.91	5.00	39.85	3.29	3.00
049DZN	.88	.88	.67	8.40	0.00	26.72	2.73	-2.00
378GNZ	1.40	1.39	.75	3.71	12.00	45.15	3.25	11.00
508KHV	0.00	0.00	0.00	4.47	*99.99	0.00	0.00	*99.99

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
389CEC	.85	.85	.70	9.00	17.00	26.26	2.92	16.00
58278S	.55	.55	1.08	4.07	18.00	17.27	4.54	17.00
ZRDLR2733	.30	.30	.58	3.80	19.00	9.19	2.42	18.00
VNM013	.06	.06	.05	8.70	8.00	1.91	.22	7.00
FQA058	.74	.73	1.44	3.04	11.00	26.53	6.98	10.00
962GAP	.04	.04	.16	2.85	20.00	1.28	.68	19.00
226470	3.04	3.02	.97	6.69	9.00	106.26	4.54	8.00
0ZN598	.58	.57	.74	4.97	-1.00	22.89	3.95	-2.00
111KLP	1.72	1.69	.69	5.60	30.00	62.80	3.45	29.00
286KPH	.08	.08	.16	5.07	6.00	3.12	.82	5.00
RBA634	.40	.40	.31	9.50	14.00	15.55	1.64	12.00
469HDR	.01	.01	.02	5.33	6.00	.40	.10	5.00
LZA573	0.00	0.00	0.00	2.85	12.00	0.00	0.00	11.00
140EAV	1.17	1.16	.91	7.60	4.00	46.14	4.86	2.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
48457W	2.18	2.16	1.00	5.40	2.00	84.31	5.24	0.00
WRY045	.04	.04	.04	4.80	13.00	1.52	.19	12.00
X0R052	-.02	*99.99	*99.99	5.80	-9.00	*9999.99	*9999.99	-6.00
228KZC	.04	.04	.04	4.22	-1.00	1.00	.13	1.00
206ANU	.10	.10	.20	2.17	4.00	2.89	.76	3.00
46729P	.66	.66	.52	3.75	-5.00	20.07	2.11	-8.00
VSL427	.34	.34	.67	3.74	3.00	10.17	2.68	0.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
76625H	0.00	0.00	0.00	5.07	*99.99	0.00	0.00	*99.99
603GBY	.56	.56	.84	5.45	2.00	18.69	3.74	0.00
XWE767	1.08	1.09	.96	6.80	-4.00	36.04	4.24	-9.00
E82646	.44	.44	.40	6.15	-8.00	14.63	1.78	-14.00
130HQE	0.00	0.00	0.00	5.54	3.00	0.00	0.00	1.00
312HPO	1.22	1.23	.76	5.54	7.00	42.46	3.54	2.00
045CWF	.32	.32	.63	4.56	0.00	10.76	2.83	-5.00
12831R	.54	.54	.94	3.69	-4.00	17.88	4.16	-9.00
32391E	2.04	2.04	.94	8.15	-4.00	70.79	4.34	-11.00
049FNU	.36	.36	.77	5.25	-5.00	11.55	3.30	-12.00
811HSD	.56	.56	.89	2.56	3.00	19.35	4.12	-3.00
44053F	.12	.12	.06	5.72	3.00	3.90	.27	-3.00
700KFC	.14	.14	.19	5.40	28.00	5.34	.99	23.00
724CTU	1.04	1.04	.83	5.37	14.00	37.55	3.99	9.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
P29192	1.96	1.95	.95	5.78	9.00	70.76	4.60	6.00
680GOC	1.36	1.35	.76	5.32	9.00	48.87	3.67	6.00
DZN800	.08	.08	.04	5.12	6.00	2.59	.16	3.00
379HWW	1.64	1.63	.82	5.26	14.00	60.84	4.08	11.00
GREATE	.80	.79	.73	5.12	2.00	29.57	3.65	-1.00
105JSX	1.76	1.75	.80	5.59	3.00	65.09	3.99	0.00
00J977	.60	.60	.78	6.22	9.00	22.19	3.89	6.00
UZA117	0.00	0.00	0.00	5.70	11.00	0.00	0.00	8.00
045GXH	0.00	0.00	0.00	7.49	*99.99	0.00	0.00	*99.99
BTJ-788	0.00	0.00	0.00	4.44	14.00	0.00	0.00	11.00
RQX808	.26	.26	.18	4.67	20.00	9.61	.92	17.00
WTK414	.33	.33	.24	4.72	7.00	13.86	1.17	4.00
060HZL	0.00	0.00	0.00	2.07	20.00	0.00	0.00	17.00
554COA	0.00	0.00	0.00	2.85	10.00	0.00	0.00	7.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
TWA441	.02	.02	.01	4.80	25.00	.71	.07	22.00
36-0699	1.10	1.09	.51	5.37	6.00	39.53	2.46	3.00
M12136	.44	.44	.86	4.56	6.00	15.82	4.16	3.00
ZZW270	0.00	0.00	0.00	5.43	12.00	0.00	0.00	9.00
373COR	.82	.81	.73	6.72	11.00	29.49	3.51	8.00
235JEG	0.00	0.00	0.00	5.61	11.00	0.00	0.00	8.00
OZV830	0.00	0.00	0.00	4.30	22.00	0.00	0.00	15.00
916CFV	1.02	1.01	.56	5.63	20.00	38.24	2.81	13.00
632AVL	0.00	0.00	0.00	4.99	5.00	0.00	0.00	-2.00
VIX957	.12	.12	.47	3.26	6.00	4.48	2.36	-1.00
KPP346	.80	.79	*99.99	0.00	6.00	29.99	*9999.99	-1.00
WJX321	1.10	1.09	.57	5.16	17.00	39.39	2.77	10.00
RSS989	.78	.77	.96	8.00	12.00	27.95	4.66	5.00
WBF424	.08	.08	.31	2.85	15.00	2.75	1.45	10.00

C-3-17

STATION: GULF		PROCESS: GULF BALANCED		LOCATION: UNIVERSITY + BOUNDARY		DATE: 6/14/74		
LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
77111R	0.00	0.00	0.00	5.13	14.00	0.00	0.00	8.00
756CYD	.02	.02	.02	5.28	13.00	.71	.08	7.00
XND019	.76	.75	.53	5.58	12.00	28.00	2.62	6.00
0233401	.98	.97	.66	5.03	23.00	34.97	3.21	17.00
TV5029	.04	.04	.03	4.93	15.00	1.43	.12	9.00
VEP825	.94	.93	.73	4.96	16.00	34.97	3.68	10.00
WIW853	0.00	0.00	*99.99	0.00	13.00	0.00	*9999.99	7.00
XVD904	.02	.02	.04	3.04	10.00	.73	.19	4.00
804GJD	0.00	0.00	0.00	5.14	35.00	0.00	0.00	29.00
624EOY	1.68	1.65	.77	5.33	12.00	57.16	3.57	6.00
VES152	.06	.06	.03	5.60	11.00	1.69	.11	5.00
432GJH	1.05	1.04	.86	4.55	4.00	24.25	2.66	-2.00
RDJ199	.16	.16	.62	5.70	6.00	5.49	2.89	1.00
XOR989	.22	.22	.43	4.15	18.00	7.81	2.05	13.00

STATION: GULF		PROCESS: GULF BALANCED		LOCATION: UNIVERSITY + BOUNDARY		DATE: 6/14/74		
LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
XVC286	0.00	0.00	0.00	4.34	18.00	0.00	0.00	13.00
093GFK	.86	.85	.81	5.27	8.00	30.03	3.80	3.00
117KPH	0.00	0.00	0.00	5.07	7.00	0.00	0.00	1.00
OV9512	.12	.12	.23	3.51	28.00	4.06	1.07	22.00
232GSN	.02	.02	.03	5.24	17.00	.74	.15	11.00
KTR796	.87	.86	.66	4.90	6.00	32.46	3.31	2.00
216KXG	.67	.66	.59	5.60	20.00	24.58	2.93	14.00
EHV401	1.02	1.01	.95	4.74	21.00	39.62	5.01	14.00
265KXL	.34	.34	.26	6.33	15.00	13.57	1.43	8.00
8708ML	.15	.15	*99.99	0.00	11.00	6.23	*9999.99	4.00
225HQB	.42	.41	.33	6.00	23.00	16.08	1.69	16.00
77263V	.03	*99.99	*99.99	6.51	15.00	*9999.99	*9999.99	8.00
78053V	1.90	*99.99	*99.99	5.57	13.00	*9999.99	*9999.99	6.00
SMI602	1.54	*99.99	*99.99	6.00	20.00	*9999.99	*9999.99	13.00

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
TVW744	0.00	0.00	0.00	5.57	*99.99	0.00	0.00	*99.99
281BIJ	1.05	1.04	.81	5.24	15.00	38.63	4.02	8.00
KSU028	1.40	1.38	.73	7.05	13.00	46.25	3.28	6.00
962GAP	1.56	1.54	.75	6.16	17.00	52.42	3.40	10.00
TXG511	.02	.02	.03	5.70	38.00	.68	.12	31.00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VFH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
449JEL	.76	.76	1.16	4.90	9.00	*9999.99	*9999.99	6.00
44763S	.54	.54	.79	5.56	-5.00	*9999.99	*9999.99	-8.00
359KZC	1.34	1.33	.50	7.20	15.00	37.07	1.87	12.00
918KKL	2.56	2.52	.92	5.44	5.00	82.17	4.03	2.00
730HNF	1.16	1.14	.83	5.89	17.00	39.01	3.79	13.00
89046N	2.28	2.25	.75	6.00	1.00	72.28	3.21	-2.00
WSU778	.37	.36	.32	5.67	7.00	11.47	1.35	3.00
932HWN	1.00	.99	.74	6.67	15.00	31.76	3.18	11.00
549JLB	.36	.36	.76	7.00	4.00	11.27	3.22	0.00
XXX	.34	.34	.72	7.00	17.00	9.60	2.74	12.00
574KMK	.55	.54	.54	6.00	27.00	19.05	2.54	21.00
205JRT	1.01	1.00	.68	5.95	23.00	35.05	3.22	18.00
694HDP	.89	.87	.68	4.56	25.00	24.26	2.55	20.00
15874V	1.95	1.93	1.76	5.35	-1.00	61.84	7.54	-6.00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAF MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
292G0Z	-.34	-.34	-.48	5.20	4.00	-11.27	-2.17	-3.00
545HTC	1.68	1.65	.71	5.80	20.00	64.18	3.69	11.00
570CYM	2.17	2.14	.90	5.62	2.00	80.72	4.53	-3.00
V28979	.70	.69	1.00	2.97	3.00	22.56	4.34	-6.00
786KX0	1.29	1.27	.57	5.33	11.00	51.30	3.07	3.00
012J0H	.38	.37	.54	5.67	18.00	14.74	2.83	11.00
VNX430	1.00	.99	.96	5.44	7.00	35.72	4.64	0.00
315KZB	2.01	1.98	.76	5.68	9.00	76.93	3.97	-2.00
519KZE	1.99	1.96	.85	5.43	*99.99	76.17	4.43	*99.99
DUL602	0.00	0.00	0.00	6.80	22.00	0.00	0.00	12.00
ZQM799	1.20	1.19	.89	8.00	10.00	48.14	4.81	-1.00
590BAG	.17	.17	.13	5.17	12.00	6.79	.69	6.00
675EAU	1.27	1.26	.48	6.16	10.00	49.44	2.54	3.00
228LKY	.29	.29	.41	5.47	8.00	11.15	2.14	5.00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
295KQQ	.07	.07	.04	5.53	*99.99	2.89	.22	*99.99

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
5970WY	.01	.01	.01	3.64	-1.00	.24	.02	-6.00
915HWP	2.67	2.65	1.07	5.84	-10.00	76.63	4.14	-15.00
751GGX	2.23	2.21	.94	5.71	-7.00	60.45	3.43	-12.00
427KQR	2.70	2.67	.96	5.55	-4.00	73.16	3.52	-7.00
172FVP	.85	.84	1.03	5.63	-10.00	23.03	3.78	-12.00
031H01	2.19	2.16	.88	5.69	6.00	61.58	3.33	3.00
074KQ5	1.33	1.31	1.01	3.64	3.00	38.06	3.93	-3.00
679GTH	2.78	2.76	1.02	6.06	-3.00	78.47	3.88	-9.00
903KLW	.20	.20	.34	5.73	14.00	5.71	1.33	9.00
678GUP	.74	.73	.76	6.17	12.00	24.22	3.36	5.00
572FFR	1.10	1.09	.83	5.11	10.00	36.01	3.67	3.00
082JDK	.23	.23	.20	5.06	15.00	7.50	.87	8.00
311JLE	1.22	1.20	.59	4.56	26.00	44.74	2.94	20.00
723HFP	.83	.82	.71	5.32	16.00	29.65	3.45	11.00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
ZND264	1.35	1.33	.83	5.54	16.00	44.70	3.73	11.00
701BLK	1.14	1.12	.55	5.07	23.00	40.14	2.64	18.00
SPOOK J	1.83	1.81	.88	5.40	3.00	59.77	3.91	-2.00
438CTY	.67	.66	.66	*99.99	19.00	22.91	3.05	14.00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
0388293	1.08	1.10	.49	5.93	*99.99	26.64	1.59	*99.99
170FTD	.52	.53	.41	4.75	-11.00	7.35	.77	-13.00
842G0Z	.01	.01	.01	4.14	*99.99	.19	.01	*99.99
645KZR	2.44	2.47	1.00	5.84	-6.00	71.46	3.86	-7.00
603ESM	.72	.73	.57	6.20	-3.00	20.66	2.18	-5.00
399CQQ	.84	.84	1.21	3.47	-2.00	24.35	4.78	-4.00
NOZ707	1.28	1.28	.84	5.90	-4.00	35.61	3.15	-8.00
545HTC	1.26	1.26	.63	5.81	23.00	40.39	2.73	18.00
103AFM	.94	.94	.77	6.13	22.00	30.26	3.29	16.00
239CTV	1.32	1.32	.77	5.69	15.00	46.50	3.63	9.00
G1157827	.25	.25	.13	5.92	-7.00	6.16	.42	-14.00
260KZE	1.17	1.16	1.01	3.44	-12.00	29.51	3.43	-18.00
405JYC	2.30	2.29	.98	5.25	1.00	66.33	3.79	-4.00
302JQU	2.01	2.00	.90	5.57	-13.00	54.79	3.28	-18.00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
F42556	.39	.39	.18	5.45	-15.00	10.17	.64	-24.00
545JSK	.24	.24	.15	5.58	-4.00	6.38	.53	-13.00
603GBY	.63	.63	.90	7.43	4.00	15.84	3.05	-3.00
038KQR	.04	.04	.03	3.53	*99.99	1.14	.11	*99.99
UUP088	1.20	1.19	.85	6.30	-7.00	34.36	3.27	-15.50
438JUA	1.06	1.05	1.05	5.00	-7.00	31.55	4.21	-17.00
999HGP	.76	.75	.81	4.67	13.00	24.18	3.45	6.00
338JQN	1.68	1.67	.99	6.30	-3.00	48.29	3.83	-6.00
907KES	1.04	1.03	1.06	4.61	1.00	30.90	4.23	-4.00
574KMK	1.20	1.19	.74	6.00	16.00	41.26	3.44	13.00
122JQV	.85	.84	.63	3.64	17.00	29.17	2.92	14.00
105HDT	1.06	1.05	.49	5.82	24.00	35.28	2.21	19.00
PKP800	.32	.32	.53	4.15	7.00	10.65	2.37	3.00
534KZR	.28	.28	.24	5.43	4.00	9.48	1.10	0.00

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
PHP979	.20	.20	.44	5.83	47.00	6.57	1.93	42.00
UNP684	.34	.34	.18	5.56	12.00	11.64	.84	7.00
033KZ8	.70	.69	.66	5.20	17.00	23.89	3.06	12.00
RSK421	.20	.20	.29	5.66	7.00	6.83	1.37	2.00
90487L	1.55	1.53	.72	5.75	18.00	53.69	3.40	13.50
KKG377	.02	.02	.02	5.20	*99.99	.71	.11	*99.99
240FFS	.30	.30	.15	5.37	22.00	9.97	.69	16.50

STATION: TEXACO PROCESS: ENVIRONICS LOCATION: BALTIMORE + FLETCHER DATE: 6/20/74

LICENSE NUMBER	RETURNED VAPOR	STANDARD RETURNED VAPOR	RET VAP TO DISPL LIQ RATIO	FILL RATE	VEH TANK- UND TANK TEMP	VAPOR MASS	VAP MASS TO DISP LIQ RATIO	VEH TANK- DISP LIQ TEMP
	(CU FT)	(CU FT)	(CF/CF)	(GPM)	(DEG F)	(GM)	(GM/GAL)	(DEG F)
651BEB	*99.99	*99.99	*99.99	7.20	7.00	*9999.99	*9999.99	4.00
124ELL	8.27	7.81	3.89	7.50	5.00	125.15	8.34	2.00
623HTS	4.40	4.13	8.59	7.20	8.00	25.66	7.13	4.00
FWA684	5.11	4.77	5.67	6.30	0.00	37.04	5.88	-4.00
THE7K	3.08	2.85	1.72	6.76	6.00	41.28	3.33	2.00
48825L	.97	.91	3.76	7.20	7.00	4.22	2.34	2.00
WYM088	1.67	*99.99	*99.99	6.00	9.00	*9999.99	*9999.99	2.00
WJU456	16.67	15.35	7.66	4.39	17.00	246.11	16.41	12.00
770KLB	17.45	16.16	6.76	7.67	13.00	200.64	11.21	7.00
305HDS	6.97	6.51	2.47	7.16	19.00	64.00	3.25	14.00
WSC130	3.64	3.33	6.91	2.16	10.00	13.76	3.82	5.00
STEAM2	2.62	2.41	5.00	6.17	14.00	18.66	5.18	9.00
MW1510	10.46	9.83	5.29	6.42	6.00	86.45	6.22	3.00
93353G	*99.99	*99.99	*99.99	*99.99	5.00	*9999.99	*9999.99	2.00

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
314GXE	13.62	12.57	5.11	6.42	6.00	104.02	5.65	2.00
PHB110	1.60	1.48	3.07	8.64	0.00	14.51	4.03	-4.00
662FZG	11.23	10.38	6.31	5.35	17.00	64.42	5.24	13.00
384KLQ	1.06	.98	2.03	8.64	34.00	8.38	2.24	29.00
77458U	2.30	2.40	3.32	9.26	19.00	22.31	4.13	14.00
DYN439	4.05	3.74	3.18	9.60	9.00	34.85	3.96	4.00
53013L	5.34	4.91	4.13	7.12	22.00	63.53	7.14	17.00
571HDT	9.30	8.56	5.48	5.20	6.00	53.15	4.54	1.00
496JQS	2.18	2.01	4.18	5.40	16.00	17.68	4.91	11.00
14382R	12.28	12.73	5.50	6.29	3.00	98.73	5.71	-2.00
37778W	1.97	1.82	3.77	7.20	23.00	7.51	2.09	18.00
UKW764	5.67	5.29	4.71	5.33	13.00	32.81	3.91	8.00
ZXM782	7.75	7.13	5.23	6.44	9.00	55.33	5.42	4.00
963G0Y	5.22	4.78	3.08	4.35	21.00	47.00	4.05	16.00

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
973JQP	3.54	3.26	3.38	9.19	12.00	38.74	5.38	7.00
FPN866	5.99	5.55	5.77	5.76	17.00	37.31	5.18	12.00
234HKK	2.08	1.94	4.04	8.64	17.00	16.06	4.47	12.00
716KPH	2.26	2.08	4.33	9.00	15.00	14.01	3.89	10.00
744GOX	5.34	4.98	5.47	7.70	26.00	41.17	6.05	21.00
760BSB	6.18	5.69	4.63	6.90	16.00	52.98	5.76	11.00
444JLC	2.07	1.90	3.96	7.20	17.00	9.85	2.74	12.00
SNP596	5.40	4.97	4.48	6.92	22.00	43.70	5.27	17.00
475KLX	20.60	19.03	7.23	4.38	17.00	137.78	6.99	12.00
46287P	13.37	12.34	5.16	6.14	15.00	172.26	9.62	10.00
726FVX	8.04	7.49	4.79	6.27	11.00	58.13	4.97	6.00
785JLA	6.50	6.05	5.08	6.28	16.00	43.79	4.92	11.00
TAM267	1.69	1.59	6.62	7.20	18.00	3.30	1.83	13.00
AZV456	1.90	1.76	2.43	10.80	12.00	13.63	2.52	7.00

C-3-31

STATION: TEXACO PROCESS: ENVIRONICS LOCATION: BALTIMORE + FLETCHER DATE: 6/20/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
KOW808	1.07	.99	4.10	7.20	13.00	2.04	1.13	8.00
17662T	2.62	2.42	3.36	8.10	26.00	16.30	3.02	21.00
20263T	3.65	3.36	3.65	8.28	19.00	26.10	3.78	14.00
400JSJ	3.49	3.22	6.69	8.64	25.00	8.32	2.31	20.00
WAC301	2.03	1.87	3.88	6.75	30.00	18.33	5.09	25.00
TC8765	2.21	2.07	4.30	5.40	21.00	16.05	4.46	16.00
710KLT	2.13	1.97	2.95	8.57	22.00	19.35	3.87	17.00
731ELS	5.55	5.13	4.00	6.40	19.00	50.39	5.25	14.00
398DLD	2.02	1.86	3.37	8.64	12.00	18.31	5.09	7.00
Q81070	2.86	2.68	5.57	4.80	12.00	16.64	4.62	7.00
VNV049	11.11	10.23	4.97	6.51	22.00	74.05	4.81	17.00
KGS913	4.88	4.49	3.78	10.68	11.00	37.19	4.18	6.00

STATION: UNION 76 PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/24/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
960KZD	.54	.53	1.11	4.80	-3.00	10.51	2.92	-7.00
L36087	2.86	2.83	1.52	7.94	-7.00	65.78	4.73	-17.00
609677	2.64	2.61	1.55	4.45	5.00	55.41	4.40	-1.00
72085W	.50	.50	1.55	7.20	-10.00	10.55	4.40	-14.00
955KLP	1.09	1.07	1.54	3.47	0.00	23.28	4.48	-5.00
DE REEN	2.74	2.68	1.67	8.00	-2.00	62.48	5.21	-8.00
TAC138	3.08	3.01	1.55	6.69	0.00	77.86	5.37	-6.00
RJU488	2.55	2.51	1.14	9.37	13.00	53.18	3.24	8.00
866DND	1.88	1.86	1.58	6.60	4.00	36.57	4.16	-2.00
233HMS	2.39	2.32	1.10	6.58	4.00	64.73	4.10	-2.00
680G0C	3.13	3.00	1.52	8.07	10.00	89.99	6.08	4.00
14022V	2.84	2.74	.91	6.46	10.00	73.50	3.52	4.00
833FVQ	3.62	3.52	1.56	6.46	28.00	91.09	5.39	21.00
350G0B	2.53	2.42	.94	6.40	26.00	70.18	3.66	19.00

C-3-33

STATION: UNION 76

PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/24/74

LICENSE NUMBER	RETURNED VAPOR (CU FT)	STANDARD RETURNED VAPOR (CU FT)	RET VAP TO DISPL LIQ RATIO (CF/CF)	FILL RATE (GPM)	VEH TANK- UND TANK TEMP (DEG F)	VAPOR MASS (GM)	VAP MASS TO DISP LIQ RATIO (GM/GAL)	VEH TANK- DISP LIQ TEMP (DEG F)
455CTV	2.05	1.99	1.55	6.40	5.00	46.38	4.83	2.00
73146W	2.20	2.11	1.10	6.70	11.00	69.91	4.89	8.00
WYL423	3.30	3.21	1.60	6.00	17.00	71.36	4.76	14.00
OVC759	.68	.65	1.40	4.20	28.00	21.97	6.28	25.00
0238947	1.13	1.13	1.69	6.00	11.00	17.56	3.51	8.00
WCM5LM	1.58	1.51	1.30	8.70	12.00	39.11	4.50	9.00
994CFV	1.48	*99.99	*99.99	0.00	10.00	*9999.99	*9999.99	83.00

APPENDIX C-4
VAPOR COLLECTION RATIOS

STATION: STANDARD PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + I5

DATE: 6/ 6/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

932HWN

246.76

270.38

080EAT

*99.99

*99.99

242CTX

325.10

333.45

13534R

178.77

186.42

E830974

217.37

247.19

55865F

190.05

202.04

874FLS

191.61

201.77

C9809

161.74

219.30

059KFO

459.91

560.14

VCL446

212.38

237.13

YYG563

255.10

274.57

GQP810

180.29

190.96

60969

345.06

417.38

92402X

326.39

350.51

STATION: STANDARD PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + I5

DATE: 6/ 6/74

LICENSE
NUMBER

COLLECTION RATIOS
GM/GAL CF/CF

96695E

251.25

244.73

XYV086

203.59

186.62

R27816

296.67

277.10

TUCKIE

385.45

373.22

950DVE

361.18

390.58

VWA636

312.77

338.35

026BHA

328.79

363.19

248ACV

140.95

145.86

588YHU

239.66

225.71

029ESQ

250.47

236.90

2LX232

304.50

316.44

838GOA

260.90

262.80

830HPA

319.16

273.67

651FVR

306.65

300.72

STATION: STANDARD PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + 15

DATE: 6/ 6/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

829360

322.19

324.55

90208T

249.99

259.52

73438M

244.54

232.38

18354V

318.20

332.08

HMX668

231.55

222.37

XDU752

244.87

234.91

296K8I

350.02

396.91

SKE220

277.44

281.15

4152

361.43

405.73

4152

779.06

900.44

186LEC

350.59

377.73

329HQA

224.89

210.18

CU0923

340.86

361.75

T0528697

302.02

328.35

STATION: STANDARD

PROCESS: INTERMARK

LOCATION: CARMEL VALLEY + I5

DATE: 6/ 6/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

4060KA

276.45

279.45

228BQ1

360.73

342.55

T0934996

324.24

328.57

372KLS

273.40

279.30

D2T709

321.65

323.11

447DKC

332.96

361.99

XUV484

318.63

314.98

016JRX

331.58

357.98

ZND264

249.30

250.43

AVERAGE

292.78

306.69

STATION: UNION 76 PROCESS: PROCESS PRODUCTS LOCATION: WARING + ZION DATE: 6/11/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
ZMP401	*99.99	*99.99
079EQU	101.21	150.77
13116R	94.95	132.01
937JFS	90.43	122.18
672GXC	92.03	119.53
774JEL	102.24	113.53
041GOA	88.54	130.72
TGT771	91.18	171.75
862JQT	107.81	152.44
422HOS	83.01	127.46
738JLA	114.56	174.13
072FKX	100.20	152.20
689ESK	82.61	164.72
613KAC	82.31	136.52

STATION: UNION 76

PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/11/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
43 204 U	86.23	164.65
739JEH	86.42	176.73
RJP777	87.63	160.40
450ETV	84.29	125.00
059GJX	72.16	110.23
299HWV	106.43	131.90
211FYZ	131.54	174.74
WLN696	116.04	178.89
W3F900	108.80	163.26
10DLR1221	87.06	152.63
137GXA	106.45	189.45
AVERAGE	96.01	149.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE
NUMBER

COLLECTION RATIOS
GM/GAL CF/CF

1043376

60.13

62.23

711KLQ

55.50

55.75

12831R

69.54

70.34

72506W

*99.99

*99.99

603GBY

21.65

24.91

TRN863

77.91

81.91

312HP0

66.83

67.65

000020

61.14

60.24

117J078

52.31

52.02

903DSM

71.83

70.45

K0Y327

84.92

93.96

1620VQ

81.75

84.01

205JRT

113.60

109.43

264FNL

74.02

74.10

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

60421F

50.96

51.88

446JEC

105.51

103.79

526GGC

105.13

100.63

236KLM

98.31

89.19

101ASI

0.00

0.00

653FBX

97.16

99.90

ZQD792

-12.68

-11.06

V29741

134.63

131.77

RGD594

112.78

109.34

86394E

65.39

64.32

639DLX

97.32

91.28

550KPG

41.82

39.99

611GGS

104.45

99.08

148HDT

4.24

4.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/12/74

LICENSE
NUMBER

37498W

159KZQ

AVERAGE

COLLECTION RATIOS

GM/GAL

CF/CF

186.71

96.00

-5.30

-4.90

68.39

67.93

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY DATE: 6/13/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
Q72787	10.63	10.96
78784L	101.24	98.84
105HDT	97.48	93.79
93229G	104.36	92.75
QMV785	108.74	106.64
754KLS	89.27	86.15
TET248	82.58	80.63
999DUH	103.77	107.59
KUL605	227.82	215.00
909JSZ	69.63	68.35
45280L	77.90	74.25
376DFJ	46.32	45.80
668KHW	98.08	95.21
TXG714	86.81	82.76

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

OUM753

16.95

16.76

0238796

98.32

99.33

735GOW

4.93

4.93

288BEX

123.23

120.18

VEU721

82.50

84.97

U40716

-25.33

-25.51

87764N

110.98

110.07

122DFK

62.47

66.27

247ADR

43.06

41.95

TTF-876

120.43

115.43

585GBT

100.34

93.86

XTL389

102.28

99.16

89461L

0.00

0.00

OZT057

5.51

5.64

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

86467P

124.88

117.90

728FEA

41.24

40.04

TST284

11.14

11.94

H54055

85.92

90.43

741DZE

0.00

0.00

5343XV

37.19

36.35

743CTT

46.18

51.05

735DQK

111.26

121.42

103AFD

105.03

106.23

587KAC

107.88

108.84

TAA480

94.86

100.36

049DZN

73.95

75.23

378GNZ

103.84

105.60

508KHV

*99.99

*99.99

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/13/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

389CEC

100.15

110.56

58278S

158.33

173.22

ZRDLR2733

25.59

95.93

VNM013

6.65

6.72

FQA958

220.15

200.23

962GAP

24.27

26.12

22647D

139.42

129.03

0ZN538

107.05

83.45

111KLP

146.56

152.74

286KPH

24.22

19.75

RBA634

53.06

45.00

469HDR

2.92

2.35

LZA573

0.00

0.00

140EAV

138.17

109.60

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/13/74

LICENSE NUMBER	COLLECTION RATIOS GM/GAL	CF/CF
48457W	145.38	115.80
WRY045	6.17	5.38
X0R052	*99.99	*99.99
228KZC	3.61	4.57
206ANU	21.87	23.97
46729F	53.56	53.25
VSL427	74.30	77.54
AVERAGE	75.49	73.64

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE
NUMBER

COLLECTION RATIOS
GM/GAL CF/CF

76625H

*99.99

*99.99

603GBY

103.79

98.16

XWE767

106.33

97.13

E82646

42.44

38.15

130HQE

0.00

0.00

312HPO

100.67

91.73

045CWF

74.23

67.73

12831R

104.29

95.27

32391E

106.62

92.41

049FNU

80.16

74.84

811HSD

110.37

98.47

44053F

7.31

6.93

700KFC

37.84

35.32

724CTU

124.29

112.42

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

P29192

137.46

122.31

680GOC

109.92

97.81

DZN800

4.72

4.60

379HWW

130.54

116.16

GREATE

100.19

83.87

105JSX

110.89

93.23

00J977

116.45

100.74

UZA117

0.00

0.00

045GXH

*99.99

*99.99

BTJ-788

0.00

0.00

RQX808

31.90

29.57

WTK414

34.25

29.74

060HZL

0.00

0.00

554COA

0.00

0.00

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 5/14/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
TWA441	2.67	2.63
36-0699	70.72	62.00
M12136	119.91	105.12
ZZW270	0.00	0.00
373COR	107.79	96.95
235JEG	0.00	0.00
OZV830	0.00	0.00
916CFV	92.43	82.15
632AVL	0.00	0.00
VIX957	64.72	53.44
KPP346	*99.99	*99.99
WJX321	87.47	79.58
RSS989	137.57	121.79
WBF424	45.63	43.42

STATION: GULF PROCESS: GULF BALANCED LOCATION: UNIVERSITY + BOUNDARY DATE: 6/14/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
77111R	0.00	0.00
756CYD	2.43	2.21
XND019	78.28	67.72
0233401	111.79	106.53
TV5029	3.86	3.49
VEP325	116.09	101.27
WIW853	*99.99	*99.99
XVD934	5.61	4.80
804GJD	0.00	0.00
624EOY	106.86	99.34
VES152	3.25	3.59
432GJH	72.27	96.39
RDJ199	81.28	73.76
XOR989	67.52	63.49

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

XVC286

0.00

0.00

093GFK

109.53

98.82

117KPH

0.00

0.00

0V9512

40.26

42.45

232GSN

4.91

4.37

KTR796

94.23

78.34

216KXG

97.56

88.51

EHY401

167.21

143.71

265KXL

43.85

35.40

870BML

*99.99

*99.99

225HQ8

58.10

51.31

77263V

*99.99

*99.99

73059V

*99.99

*99.99

SMI602

*99.99

*99.99

STATION: GULF

PROCESS: GULF BALANCED

LOCATION: UNIVERSITY + BOUNDARY

DATE: 6/14/74

LICENSE
NUMBER

COLLECTION RATIOS
GM/GAL CF/CF

TVW744

*99.99

*99.99

281BIJ

123.55

108.04

KSU028

98.11

94.02

962GAP

107.34

103.58

TXG511

5.25

6.04

AVERAGE

62.16

56.24

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
449JEL	*52.59	*99.99
44763S	*47.24	*99.99
359KZC	60.69	72.45
918KKL	114.60	111.11
730HNF	124.49	122.39
89045N	87.13	84.35
WSU778	38.88	39.11
932HWN	101.52	104.91
549JLB	89.42	88.74
XXX	88.89	104.19
574KMK	94.14	95.46
205JRT	113.73	112.48
694HDP	93.16	117.93
15874V	195.45	186.28

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
292G0Z	-58.10	-53.43
545HTC	117.93	100.74
570CYM	121.59	99.56
V28979	112.42	105.44
786KX0	88.49	69.61
012J0H	90.60	76.38
VNX430	128.84	111.41
315KZ8	107.56	86.08
519KZE	*99.99	*99.99
DUL602	0.00	0.00
ZQM799	132.12	102.99
590BAG	20.52	16.38
675EAU	73.02	59.95
228LKY	63.30	52.39

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/17/74

LICENSE
NUMBER

295KQQ

AVERAGE

COLLECTION RATIOS
GM/GAL CF/CF

*99.99

*99.99

86.02

82.63

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
597DWY	.62	.79
915HWP	97.56	99.92
751GSX	83.44	91.13
427KQR	90.15	100.15
172FVP	91.72	100.13
031H01	95.87	106.97
074KQ5	105.26	112.36
679GTH	97.41	103.55
903KLW	41.28	46.67
678GUF	99.34	96.19
572FFR	105.83	101.43
032JDK	26.76	26.33
311JLE	107.38	101.95
723HFP	110.22	100.83

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/18/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
ZND264	119.09	117.33
7013LK	93.41	91.94
SPOOK J	105.96	99.38
438CTY	101.86	99.30
AVERAGE	87.40	88.65

STATION: STANDARD PROCESS: STANDARD BALANCED LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
0388293	*99.99	*99.99
170FTD	18.61	39.78
842GOZ	*99.99	*99.99
645KZR	99.00	104.08
603ESH	57.01	61.48
399CQQ	126.64	132.29
NOZ707	79.90	86.80
545HTC	96.43	102.93
103AFM	112.89	120.61
239CTV	113.02	105.24
G1157827	9.91	12.12
260KZE	78.45	91.03
405JYC	100.47	106.82
302JQU	75.00	80.46

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
F42556	13.80	15.15
545JSK	12.67	14.06
603GBV	81.68	99.64
038KQR	*99.99	*99.99
UUP088	76.68	78.42
438JUA	87.11	95.47
999HGP	103.32	103.80
338JQN	99.32	104.80
907KES	112.21	115.19
574KMK	113.02	109.45
122JQV	97.25	94.81
105HDT	79.20	82.60
RKP8J0	68.19	64.38
534KZR	30.61	28.08

STATION: STANDARD PROCESS: STANDARD BALANCED

LOCATION: BALTIMORE + LAKE MURRAY DATE: 6/19/74

LICENSE NUMBER	COLLECTION RATIOS	
	GM/GAL	CF/CF
PHP979	107.59	160.76
UNP684	25.38	23.72
033KZB	99.28	95.52
RSK421	38.84	35.41
90487L	112.50	107.70
KKG377	*99.99	*99.99
240FFS	23.77	24.32
AVERAGE	76.12	80.55

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

6518EB

*99.99

*99.99

124ELL

237.36

467.67

623HTS

297.87

*68.15

PWA684

155.82

618.55

THE7K

94.72

206.62

48825L

66.64

452.22

WYM088

*99.99

*99.99

WJU456

531.83

*05.99

770KLB

339.68

886.23

305HDS

108.32

372.39

WSC130

112.92

874.67

STEAM2

161.30

680.85

MW1510

179.14

646.63

93353G

*99.99

*99.99

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

314GXE

160.84

614.00

PH8110

106.81

334.72

662FZG

172.16

930.84

384KLO

95.35

447.18

77458U

137.76

499.88

DYN439

115.49

395.62

53013L

248.71

663.90

571HDT

127.69

646.99

496JQS

156.97

591.57

14332R

154.79

619.38

37778W

73.81

620.51

UKW764

119.94

629.28

ZXM782

158.21

650.37

963GOY

139.08

484.39

STATION: TEXACO PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER DATE: 6/20/74

LICENSE
NUMBER

COLLECTION RATIOS
GM/GAL CF/CF

973JQP

163.05

443.89

FPN866

167.97

832.98

234HKK

144.76

583.26

716KPH

122.68

661.00

744G0X

224.40

967.06

7603SB

184.08

655.22

444JLC

88.68

571.68

SNP596

183.46

720.20

475KLX

226.70

*43.91

46287P

303.49

715.83

726FVX

148.64

617.21

785JLA

157.23

719.75

TAM267

60.21

976.65

AZV456

76.51

319.37

STATION: TEXACO

PROCESS: ENVIRONICS

LOCATION: BALTIMORE + FLETCHER

DATE: 6/20/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

KOW808

34.82

548.04

17662T

111.88

593.42

20263T

126.12

549.19

400JSJ

84.33

*52.88

WAC301

201.57

760.25

TCB765

153.01

675.70

710KLT

134.82

473.53

731ELS

175.00

601.62

398DLD

154.11

507.90

Q81070

140.05

730.80

VNV049

167.53

798.56

KGS913

125.00

486.63

AVERAGE

157.32

650.11

STATION: UNION 76 PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/24/74

LICENSE
NUMBER

COLLECTION RATIOS
GM/GAL CF/CF

960KZD

74.81

115.91

L36087

109.26

138.45

609677

120.69

177.42

72085W

104.60

146.76

955KLP

117.35

165.72

DE REEN

131.99

172.08

TAC138

139.15

164.45

RUU488

99.55

152.87

8660ND

112.72

178.05

233HMS

111.12

123.52

680GOC

177.34

188.53

14022V

102.59

112.96

833FV0

199.77

275.49

350G0B

131.29

158.94

STATION: UNION 76

PROCESS: PROCESS PRODUCTS

LOCATION: WARING + ZION

DATE: 6/24/74

LICENSE
NUMBERCOLLECTION RATIOS
GM/GAL CF/CF

455CTV

137.46

186.57

73146W

150.11

147.67

WYL423

158.63

240.96

OVC759

248.47

273.93

0238947

107.84

226.31

WCMSTM

139.88

177.13

994CFV

*99.99

*99.99

AVERAGE

133.73

176.19

APPENDIX C-5
CALCULATION METHODS

The method of calculating performance for each column of Appendix C-4 is as follows:

1. Returned Vapor = Vapor Volume After -
Vapor Volume Before
2. Standard Return Vapor =
$$\frac{[\text{Ret. Vap.}] [29.92 + (\text{Vap. Ret. Press.} \times 0.07355)] \times [540]}{[29.92] \times [470 + \text{Vap. Temp.}]}$$
3. Ret. Vap. to Displ. Liq. Ratio =
$$\frac{(\text{Ret. Vap.})}{(\text{Gal. Fill}) \times (0.1337)}$$
4. Fill Rate =
$$\frac{[\text{Gal. Fill}]}{[\text{Fill Time}]}$$
5. Veh. Tank - Und. Tank Temp. =
Veh. Tank - Underground Tank Temperature
6. Vapor Mass =
$$(\text{Std. Ret. Vapor}) \times (\text{Conc.}) \times (55.648)$$
7. Vapor Mass to Disp. Liq. Ratio =
$$\frac{(\text{Vapor Mass})}{(\text{Gal. Fill})}$$
8. Veh. Tank - Disp. Liq. Temp =
Vehicle Tank - Dispensed Liquid Temperature

The returned vapor for the Environics data was additionally corrected for the fill time to total nozzle time according to the following:

$$\text{Returned Vapor} = (\text{Vap.Vol.After} - \text{Vap.Vol.Before}) \times \left(\frac{\text{Fill Time}}{\text{Tot. Nozzle Time}} \right)$$

The method for calculating collection ratios was as follows:

$$\text{GM/GAL} = \frac{(\text{Vap.Mass/Disp.Liq}) \text{ Actual}}{(\text{Vap.Mass/Disp.Liq}) \text{ Baseline}} \times 100$$

$$\text{CF/CF} = \frac{(\text{Ret. Vap. To Disp. Liq Ratio}) \text{ Actual}}{(\text{Ret. Vap. To Disp. Liq. Ratio}) \text{ Baseline}} \times 100$$

APPENDIX D
RVP ANALYSIS

CABLE ADDRESS "SAYBOLTRIL"
ALL CODES USED - SPECIFY

SPECIALISTS IN TANK CALIBRATING
INSPECTION OF BULK CARGOES,
PETROLEUM AND OTHER LIQUIDS,
LICENSED WEIGHERS AND SAMPLERS
OF VEGETABLE OILS, WAXES
AND FATS.

LOS ANGELES AREA -
SPRUCE 5-1153
HARBOR AREA - TERMINAL 5-8383

E. W. SAYBOLT & CO., INC.

JOS. H. MCCABE JOS. H. MCCABE, JR.
APPROVED AND LICENSED BY
THE NEW YORK PRODUCE EXCHANGE
INSPECTORS OF PETROLEUM

LOS ANGELES AREA
P. O. BOX 1146 - 115 AVALON BLVD.
WILMINGTON, CALIF. 90744

LABORATORIES

KENILWORTH, N.J.
PHILADELPHIA, PA.
HAMMOND, IND.
NEW ORLEANS, LA.
CORPUS CHRISTI, TEX.
PASADENA (HOUSTON), TEX.
WILMINGTON, CALIF.
TAMPICO, MEX.
SEATTLE, WASH.
PORTLAND, ORE.
CHICAGO, ILL.
BOSTON, MASS.
WEST HAVEN, CONN.

SERVING THE PETROLEUM INDUSTRY FOR OVER 60 YEARS
DEPENDABLE INSPECTION SERVICE AT ALL PORTS ON THE ATLANTIC, GULF AND PACIFIC COASTS

LABORATORY ANALYSIS REPORT

SAMPLE DESIGNATED BY CLIENT AS

GASOLINE

June 18, 1974

FROM

Submitted by T. R. W. Systems

FOR

Analysis

P. O. NO. 206 JA 4E

THIS LABORATORY REPORT MAY NOT BE PUBLISHED OR USED EXCEPT IN FULL. SHALL NOT BE USED FOR ADVERTISING OR IN CONNECTION WITH ADVERTISING OF ANY KIND UNLESS PERMISSION FOR THE PUBLISHING OR ADVERTISING OF AN APPROVED ABSTRACT HAS BEEN OBTAINED, IN WRITING FROM E. W. SAYBOLT & CO., INC.

Samples marked:

Reid Vapor Pressure @ 100°F.

Union Station - end of day	8.6
Inter mark - Standard Bulk Terminal	8.9
91	8.1
Gulf Station- Before drop	8.1
Gulf from Bulk Station	8.1
G J X	7.4
Mercury Brougham Gulf Sta. San Diego	7.6

NOTE: Also received 2 - 1/2 pint samples - unable to read identification
(Ink washed out)

D-1

E. W.  & CO., INC.

JE Sherman
DEPUTY INSPECTOR OF PETROLEUM
APPROVED BY NEW YORK PRODUCE EXCHANGE

CABLE ADDRESS "SAYBOLTRIL"
ALL CODES USED SPECIFY

SPECIALISTS IN TANK CALIBRATING
INSPECTION OF BULK CARGOES,
PETROLEUM AND OTHER LIQUIDS,
LICENSED WEIGHERS AND SAMPLERS
OF VEGETABLE OILS, WAXES
AND FATS.

LOS ANGELES AREA -
SPRUCE 5-1153
HARBOR AREA - TERMINAL 5-8363

E. W. SAYBOLT & CO., INC.

JOS. H. MCCABE JOS. H. MCCABE, JR.
APPROVED AND LICENSED BY
THE NEW YORK PRODUCE EXCHANGE

INSPECTORS OF PETROLEUM

LOS ANGELES AREA
P. O. BOX 1146 - 115 AVALON BLVD.
WILMINGTON, CALIF. 90744

LABORATORIES

KENILWORTH, N.J.
PHILADELPHIA, PA.
HAMMOND, IND.
NEW ORLEANS, LA.
CORPUS CHRISTI, TEX.
PASADENA (HOUSTON), TEX.
WILMINGTON, CALIF.
TAMPICO, MEX.
SEATTLE, WASH.
PORTLAND, ORE.
CHICAGO, ILL.
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WEST HAVEN, CONN.

SERVING THE PETROLEUM INDUSTRY FOR OVER 60 YEARS
DEPENDABLE INSPECTION SERVICE AT ALL PORTS ON THE ATLANTIC, GULF AND PACIFIC COASTS

LABORATORY ANALYSIS REPORT

SAMPLE DESIGNATED BY CLIENT AS

GASOLINE

June 26, 1974

FROM

Submitted by T R W Systems

FOR

Analysis

P. O. NO. 206 JA 4E

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	Reid Vapor Pressure @ 100°F.
Chev. 6/18/74	8.9
Std. Bulk Term. 6/18/74 1192	9.1
Chev Vega 2300 License 909JS	8.6
Chev 3/4 Ton P.U. Lic. 45280L	8.1
Ford 1972 572 FFR	8.6
Calif. 603 GBY	8.8
KTR 796	8.7
312 HPO	6.6
TVS 029	8.4
932 KWN	8.8
918 KKL	8.5
574 KMK	8.2
ZND 264	8.6
Unmarked Bottle	Insufficient sample
Unable to read - submitted 6/14/74	8.6
Unable to read - submitted 6/14/74	8.8

E. W. SAYBOLT & CO., INC.

J. H. Sherman
DEPUTY INSPECTOR OF PETROLEUM
APPROVED BY NEW YORK PRODUCE EXCHANGE

D-2

CABLE ADDRESS "SAYBOLTRIL"
ALL CODES USED - SPECIFY

SPECIALISTS IN TANK CALIBRATING
INSPECTION OF BULK CARGOES,
PETROLEUM AND OTHER LIQUIDS,
LICENSED WEIGHERS AND SAMPLERS
OF VEGETABLE OILS, WAXES
AND FATS.

LOS ANGELES AREA -
SPRUCE 5-1153
HARBOR AREA - TERMINAL 5-B383

E. W. SAYBOLT & CO., INC.

JOS. H. MCCABE - JOS. H. MCCABE, JR.
APPROVED AND LICENSED BY
THE NEW YORK PRODUCE EXCHANGE

INSPECTORS OF PETROLEUM

LOS ANGELES AREA
P. O. BOX 1146 - 115 AVALON BLVD.
WILMINGTON, CALIF. 907..

SERVING THE PETROLEUM INDUSTRY FOR OVER 60 YEARS
DEPENDABLE INSPECTION SERVICE AT ALL PORTS ON THE ATLANTIC, GULF AND PACIFIC COASTS

LABORATORIES

KENILWORTH, N.J.
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WILMINGTON, CALIF.
TAMPICO, MEX.
SEATTLE, WASH.
PORTLAND, ORE.
CHICAGO, ILL.
BOSTON, MASS.
WEST HAVEN, CONN.

LABORATORY ANALYSIS REPORT

SAMPLE DESIGNATED BY CLIENT AS GASOLINE

June 28, 1974

FROM

Submitted by T R W Systems
6/27/74.

FOR

Analysis.

P.O.NO. 206 JA -4E

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Reid Vapor Pressure @ 100 °F.

1974 FORD 907KES - 6/19/74.1000	8.6
1973 DODGE 438 JUA-6/19/74.0855	8.7
1972 FORD 603 GBY -6/19/74.0805	8.0
1972 FORD 662 FZG -6/20/74.1110	8.2
* NO. 12	0.2
NO. 101	8.3
NO. 200	8.6
No.256	7.9

* Sample No. 12 API @ 60 °F. 10.0
apparently water, slight gasoline odor.

E. W. SAYBOLT & CO., INC.

DEPUTY INSPECTOR OF PETROLEUM

APPROVED BY NEW YORK PRODUCE EXCHANGE

D-3

APPENDIX E
SAMPLE DATA SHEETS

DAILY STATION DATA SHEET

Station Name _____ Date _____

Vapor Recovery System _____ Installed Date _____

	<u>AM</u>	<u>Noon</u>	<u>PM</u>
	_____ Hrs	_____ Hrs	_____ Hrs
Dry Bulb Temp.	_____ °F	_____ °F	_____ °F
Wet Bulb Temp.	_____ °F	_____ °F	_____ °F
Amp. Pressure	_____ " Hg	_____ " Hg	_____ " Hg
Wind Velocity	_____ ft/sec	_____ ft/sec	_____ ft/sec
Overcast	_____ %	_____ %	_____ %

	<u>Start of Day</u>		<u>End of Day</u>	
Tank 1	_____ gal	_____ °F	_____ gal	_____ °F
Tank 2	_____ gal	_____ °F	_____ gal	_____ °F
Tank 3	_____ gal	_____ °F	_____ gal	_____ °F
Tank 4	_____ gal	_____ °F	_____ gal	_____ °F
Pump Gallonage	1 _____ gal		_____ gal	
	2 _____ gal		_____ gal	

Station Personnel _____
 Station Personnel _____

Test Personnel _____

Visitors (long term) _____

Visitors (part time) _____

Remarks:

VEHICLE COLLECTION DATA SHEET

Time: _____

Lic. # _____ State _____

Make _____ Model _____

Year _____

Station: _____

Date: _____

Pump No. _____

Local/Freeway Driving _____ Distance Travelled _____ mi.

Vehicle

Tank Temp. _____ °F Fill Pressure: Max _____ in. H₂O Avg _____ in. H₂O

Leak Check: Pressure _____ in. H₂O Flow _____ cc/min

RVP Sample: Yes _____ No _____ Value _____

Gallons _____ Fill Time _____ min. _____ sec.

Total Nozzle Time: _____ min. _____ sec.

Type of Nozzle Fit _____ Expl. Reading _____

Spitback: Yes _____ No _____ Amount _____

Vapor Return

Vapor Temp _____ °F Liquid Temp _____ °F

Volume Meter: After _____ ft³

Before _____ ft³

Total _____ ft³

Concentration: Average _____ %

TANK DROP DATA SHEET

Station _____

Time _____

Date _____

Underground Tank Temperature (°F)

Tank Truck Temperature (°F)

Tank 1 _____ initial _____ final

Tank 1 _____ initial _____ final

Tank 2 _____ initial _____ final

Tank 2 _____ initial _____ final

Tank 3 _____ initial _____ final

Tank 3 _____ initial _____ final

Size of Underground Tanks (gal) Tank 1 _____ Tank 2 _____ Tank 3 _____

Average monthly throughput total _____ gal

Ambient Temp. _____°F

Ambient Pressure _____ in. Hg

If secondary equipment starts during drop, record time of:

Start up _____

Shut off _____

Underground Tank Volumes (gal)

Initial Tank 1 _____ Tank 2 _____ Tank 3 _____

Final Tank 1 _____ Tank 2 _____ Tank 3 _____

Drop Time (min.) Initial Tank 1 _____ Tank 2 _____ Tank 3 _____

Final Tank 1 _____ Tank 2 _____ Tank 3 _____

Monitor During Drop: Underground Tank Pressure _____ Temp _____

Truck Tank Pressure _____ Temp _____

Explosimeter Readings at Joints _____

At inlet to control device or vent of vapor balance

System monitor: Hydrocarbon concentration (%) _____ max. _____ avg.

Vapor Pressure (in H₂O) _____ max. _____ avg.

Vapor Temperature (°F) _____ max. _____ avg.

Vapor Volume (ft³) _____ initial _____ final

TANK DROP DATA SHEET (CONTD)

At Outlet Monitor: Hydrocarbon Concentration (%) _____ max. _____ avg.
Vapor Pressure (in H₂O) _____ max. _____ avg.
Vapor Temperature (°F) _____ max. _____ avg.
Vapor Volume (ft³) _____ initial _____ final