217-PIN WIRE-WRAPPED
BUNDLE
COOLANT MIXING TEST

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ABSTRACT

This report presents the results of a coolant mixing test in a wire-wrapped, 217-pin, full-scale model of an FTR fuel assembly. Salt-injection-conductivity techniques were employed using water as the coolant. 464 conductivity probes were placed in a 1/6th sector at various axial locations.

The results were reduced into an effective turbulent mixing model and the limitations of this model described. A wire-wrap, forced diversion crossflow model was presented which was qualitatively supported by the results. Mixing on a gross basis in this wire-wrapped bundle was three to four times the natural turbulence level; thus the mixing was significant, but insufficient to directly temper thermal effects across the fuel assembly.

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SUMMARY AND CONCLUSIONS

In summary, this test has met its objectives by producing qualitative and quantitative data from which coolant mixing in wire-wrapped 217-pin fuel assemblies can be deduced. The major mixing conclusions are as follows:

- Coolant mixing in a wire-wrapped bundle is insufficient to directly temper thermal effects across an LMFBF assembly. In particular, the mixing is insufficient to directly affect the duct wall temperature differences across an FTR fuel assembly.
- Locally, the mixing or crossflow was very directional and additional code development is required to predict local thermal hydraulic effects. A conservative model for these directional wire wrap forced diversion crossflows was presented which was based on the coolant being forced at the helical wire wrap angle when the wrap was in the gap. The average interior total channel crossflow was 20% of channel flow per inch. The trends of this model were supported by the deduced qualitative crossflow data. Verification of the model must await the code development which can check the massive downstream data against this model.
- However, on a gross basis, the mixing appeared quite symmetrical; thus, the data justify the use of an effective turbulent nondirectional mixing model for analyzing gross effects over the length of an LMFBF fuel assembly. The data suggest that the mixing parameter β_e is in the range .015 and .02. While the data indicated that the lower value range

should be used near the wall, the difference in mixing levels between interior and outer channels is not significant enough to justify the use of two β 's in most reactor analyses. This effective β range corresponds to total interior channel mixing rates of 20 to 25% of channel flow per inch (effectively 6.6 to 8.3% per inch per gap), which are about three to four times the natural turbulence level.

- There existed a small peripheral (swirl) flow along the wall, whose average direction was slightly greater than half the helical wire wrap angle.

Finally, several descriptive models of wire wrap forced diversion were inferred which depend on the frame of reference:

- Following the actual fluid flow, the fluid tended to follow the helical wire wrap path from channel-to-channel around a pin. A significant fraction of this fluid was left behind in each channel.
- Following an interior channel, the coolant was swept by a wire wrap in different directions every one-third of a pitch.
- Following along a gap between two interior channels, the crossflow was forced in opposite directions every one-half pitch as each wire wrap passed through.

I. INTRODUCTION

In the design of a normal wire wrapped LMFBR fuel assembly, the largest thermal hydraulic uncertainty has been associated with the coolant mixing caused by the wire wraps. Theoretical analyses and previous experimental attempts were inadequate to establish the extent of mixing caused by the wire wraps in FTR fuel assemblies.

Due to schedular and economic reasons, it was decided to perform one test in a 217-pin wire-wrapped hydraulic model of a FTR fuel assembly to establish the extent of mixing to support immediate FTR design problems. No time was available for an orderly instrumentation development or preliminary testing in small bundles; only current instrumentation techniques and knowledge could be used.

With these requirements in mind, it was decided to use a salt injection technique with water at room temperature as the coolant. The salt patterns would be assumed to be a direct measure of the flow patterns. The flow patterns would be reduced to coolant mixing models and parameters. These models and parameters would then be incorporated into thermal hydraulic codes for prediction of coolant mixing, diversion and flow in fuel assemblies. The code would then determine enthalpy distributions from the coolant mixing, diversion, flow and conduction considerations.

In order to adequately determine the mixing, it was considered necessary to instrument locally near the injection location to obtain qualitative trends and models, and also instrument massively (1/6th sector of bundle) far downstream to calibrate these models. In order to provide this massive instrumentation without disturbing the flow, it was decided to use a conductivity technique. That is, the salt concentration would be determined by measuring the conductivity of the coolant in the

channel.

Thus, this project developed into an experimental test to measure salt distributions by a conductivity technique with water flowing in a highly instrumented 217-pin full-scale hydraulic model of the FTR fuel assembly. This report will concentrate on the mixing results and will only briefly discuss the experimental and electronics setup.

II. EXPERIMENTAL SETUP

A. TEST SECTION

The 217-pin bundle assembly was also to be used for pressure drop testing; thus it was required to be prototypic of the actual reactor fuel assembly in relation to the pressure drop at the inlet grid and along the cladding, as well as in relation to the channel-to-channel mixing. Each pin, 0.230 inch OD, was packed into a hexagonal array, but spaced from its neighbors by an 0.056 inch diameter wire wrap. The wire wrap was wound in a clock-wise helix with an 11.9-inch pitch over the fuel pin cladding. All wire wraps were stainless steel and were electrically grounded. Phasing of the wire wraps, which is necessary for proper packing, was maintained by the inlet grid and corresponding mating slots in the lower end caps. The entire assembly was contained in a hexagonal flow housing measuring 4.334 inch inside across the flats.

At the writing of this report, the bundle had not received a post-test inspection. An addendum to this report will be written if post inspection reveals any significant surprises.

1. Pins

Three types of pins were required for this assembly:

- 1) Dummy pins
- 2) Instrumented pins
- 3) Injection pins

The stainless steel dummy pins were fabricated by the Fuels and Materials Department, to the specifications given in Figure A1 (H-3-32409).

Fifty-eight instrumented pins were fabricated from laminated

phenolic tubing, NEMA grade XXX. Three basic electrode arrangements were necessary to provide the required measurement patterns. The fabrication of the pins was similar for each of the arrangements. First, the 1/4 inch OD x 3/16 inch ID phenolic tubing wall was drilled with the required electrode pattern, then a length of 17 gage B&S Formvar insulated copper wire (0.045 inch diameter) was pulled through the tube and out each hole. Each pin had eight electrodes. The tube bore was filled with epoxy resin to provide an insulating seal. Each pin was then centerless ground to an outside diameter of 0.230 inch and the exposed copper electrodes nickel plated. The pins were trimmed to length and a lower end cap, which engages the lower grid, was attached with epoxy glue. The end cap slot was oriented as required to assure the proper electrode location and wire wrap phase. Figure A2 (H-3-32456, Sheet 4) shows the details of the electrode orientation. The wire wrap was positioned on each pin by use of a helixly slotted mandrel. The annealed stainless steel wire for the wire wrap was seated on the pin with axial tension and the upper end secured with epoxy glue. The lower end of each wire wrap was anchored with epoxy glue into a hole in the end cap.

A salt solution was to be injected into defined channels within the bundle; to avoid disturbing the normal fluid flow by the injection, an equal amount was to be withdrawn from the same channel. Three such injection pins were provided. The injected solution was pumped into the small coaxial 0.042-inch ID tube and the withdrawal flow was forced out the remaining annular space in the pin. Suitable metering and flow

control was provided. To ensure that the injected stream would be thoroughly mixed with the flow in the channel before release, three fins between the injection pin and the two adjacent instrument pins confined the flow to the channel. These fins extended 2-3/4 inches downstream of the injection point. Previous studies (Reference 1) of mixing in a single channel showed mixing to be complete (within 13 percent) only two inches downstream. The fins, however, added surface area to the flow channels which may have caused some flow diversion. To compensate for this the wire wrap which would have turned into the injection channel just downstream of the injection port was interrupted to leave the space between the fins open. The amount of wire wrap surface thus removed compensated for the fin area. However, the wire wraps were not removed in the three surrounding channels and the additional flow resistance caused by the fins was estimated to be nine percent in these adjacent channels. Figure A3 (H-3-32456, Sheet 5) shows the injection pin and fin details. Figure 1 is a photo of the injection pin and two adjacent instrumented pins which shows the injection and withdrawal ports, fins and interrupted wire wrap. The first electrode just downstream (to the right) of the fins can also be seen.

2. Duct

The hexagonal stainless steel flow duct which houses the 217-pin assembly was equipped with pressure measuring taps upstream and downstream of the bundle. Also, at five locations along the bundle length, valved headers connected taps on all six flats, so that grab samples

at each flat could be taken. Ports were also provided near the center of the instrumented segment for injection of salt solution and to permit grab sampling for chemical analysis. The instrumented pins were long enough to penetrate a Tee on the downstream end of the duct. A compression seal prevented water leaks from around the instrumented pins.

3. Sample Locations

In the assembled bundle, the probes were primarily located in a 1/6th sector. Three injection pins within the bundle were provided; in addition, salt solution could be injected through the duct wall. The probe pattern at the nine instrumented elevations is shown in Figures A4a through A4i. Each electrode is uniquely described by the pin number and the electrode number; for example, 36-1 indicates pin 36 electrode number 1. Throughout this report, the wire wrap is identified by the pin to which it was attached (36) and the channel number is the electrode number 36o or 34e; "o" for odd and "e" for even, if the electrodes faced two channels. Interior channels were those far within the bundle. Outer channels were those along the wall. An inner channel was any triangular channel (non-outer channel).

The axial relationship of the various electrode planes, wall sample ports and injection points is given in Table I. In later discussions of the results, the end of the fins is used as a starting reference for tracer (salt solution) release. For convenience, the wire wrap pitch distance of 11.9 inches is referred to as a nominal 12 inches. These relations are also tabulated.

The wall sample taps were in channel 6 and the header taps were in channel 5 through flat number one.

Figure 1. Photograph of Injection Pin and Fins

B. TEST ARRANGEMENT

The test assembly was installed in the BNW Fluid and Energy Systems hydraulic loop. A schematic of the pertinent aspects of the loop is shown in Figure 2. The test section was in a vertical orientation with upward flow in it.

Measured concentrations of sodium nitrate (NaNO_3) solutions were to be injected at known flow rates; to avoid any hydraulic unbalance in the injected channel, an equal flow of water was withdrawn just upstream of the injection point. These injection flow systems are shown in Figure 3.

Typically, an experimental run was made by first calibrating the probe at several known NaNO_3 concentrations. This calibration was carried out each test day by injecting known amounts of the salt into the loop in steps to cover the expected concentrations. The loop was run in a recirculation mode and was cooled to provide a constant temperature. Actual salt concentration was determined by chemical analysis of grab samples. The calibration information was computer-processed into individual calibration curves for each sensor. These curves were only applied to test data taken the same day .

For the actual runs, the loop was valved to the once-through mode. The incoming cold water was heated to the same temperature as was used for the calibration. When the flow and temperatures had been established, complete zero readings on all conductivity probes were taken. Then, injection of the salt solution at the location and amount required by the test plan was started and all the sensor probes scanned. Inlet grab

TABLE I
ELECTRODE AND SAMPLE PORT LOCATIONS

Sample Type	Downstream Distance-Inches			Number of Wire Wrap Pitches
	Referred To Clad Start	Referred To Fin End		
		Actual	Nominal	
Header B	0			
Fins Start	9			
Pin withdrawal port	9.25			
Pin injection port	9.75			
Wall injection port	11.74			
Header C	12.19			
Fins end	12.75	0	0	
1st probe plane	12.89	0.14	0	0
1st wall sample tap	14.85			
2nd probe plane	14.88	2.13	2	1/6
2nd wall sample tap	16.85			
3rd probe plane	16.86	4.11	4	1/3
3rd wall sample tap	18.83			
4th probe plane	18.84	6.09	6	1/2
4th wall sample tap	21.81			
5th probe plane	21.82	9.07	9	3/4
Header D	24.09			
5th wall sample tap	24.78			
6th probe plane	24.79	12.04	12	1
7th probe plane	30.74	17.99	18	1-1/2
Header E	35.99			
8th probe plane	36.69	23.94	24	2
Header F	47.89			
9th probe plane	48.59	35.74	36	3

Figure 2. Test Loop Flow Schematic Diagram

Figure 3. Injection-Withdrawal System Flow Schematic

samples were taken for chemical analysis so that corrections for sodium in the cold water supply could be applied. Outlet grab samples were taken to check material balance. These procedures were followed for each for the desired run conditions. Following the completion of several run conditions (cases), the probes were again recalibrated to determine the amount of any drift in the probe sensitivity.

C. ELECTRONICS AND DATA ACQUISITION SETUP

This section will very briefly describe the electronics and method used to scan the conductivity probes. The basic electronics setup has been used in other HEDL test programs and will be thoroughly described in future reports by G. W. Riedeman and others.

The conductivity measurement technique measured the voltage drop between an insulated electrode and the grounded metallic test section structure when excited by a constant current source. To avoid polarization, this source was interrupted and the electrode grounded 100,000 times each second. The resulting output voltage was an analog of the electrolyte concentration immediately adjacent to the electrode.

Because the data acquisition equipment provided only 100 channels, the 464 test section probes were connected in overlapping groups (five of 88, one of 72 probes) to generate the data for each test condition. To ensure comparable results, eight probes from one pin remained connected at all times, and were to provide a reference between each of the six scan groups. These reference probes, however, behaved unreliably and their results were finally discarded.

The salt injection consistency between scans of a run was based on the continual surveillance of the very stable injection system.. This

injection system was so stable that no measurable error is considered attributable to salt injection variations within a run.

All dynamic test data were recorded on digital magnetic tape and subsequently processed on a large, general purpose computer. Data processing consisted of averaging both injection on and injection off responses from each conductivity probe, converting these values to equivalent ppm electrolyte concentration, and subtracting the off from on values to yield the response at each sensor resulting from the electrolyte injected. The results were printed and the computer output reduced to form Table A-III. Each page of Table A-III is a complete scan of the 72 or 88 probes.

D. EQUIPMENT ACCURACY

The overall accuracy of the test results is dependent upon the accuracy of the basic data (flow, sodium concentrations, etc.), upon the actual geometry of the test section, upon the stability of probes and data systems and upon the concentration distribution within a channel.

The duct diameter flat-to-flat was measured at 99 locations. The maximum deviation was $\pm .012$ inch; the average inside dimension was 4.334 inches. Each of the metallic pins was measured at four locations. The maximum deviation was $\pm .005$ inch. The average pin diameter was .2301 inch.

Each of the wire wraps used in the metallic pins was measured at seven locations. The maximum deviation was $\pm .0001$ inch. The average diameter was .0564 inch.

For the 58 instrumented pins, the average diameter of the plastic pins was .2305 inch. The average diameter of the wire wrap was $.0557 \pm$

.0001 inch. Loop flow was determined by a calibrated flowmeter to $\pm 1/2$ percent.

The injection flow metering tubes were calibrated with NaNO_3 solutions of the concentrations used; the combined accuracy of the calibration and readout system is estimated at ± 1 percent. Fluid temperatures were measured with an accuracy of $\pm 2^\circ\text{F}$. The analysis of the grab samples for sodium was by flame photometer. Accuracy was estimated to be better than 5 percent. The precision of the measurements was better than 1 percent; as all sodium analyses were with the same instrument, the relative material balances obtained should be to about 1 percent. The requirement of correcting for sodium in the incoming water, the "blank correction", however, will reduce the material balance accuracy somewhat; perhaps to about 3 percent.

The vast majority of the probes performed satisfactorily. However, shifts in calibration of some probes occurred during both the first series (runs 1 through 15) and the second series (runs 16 through 19) of tests. Special precautions, such as minimizing pump starts and stops and performing the entire series within one day, were used during the second series in order to minimize the calibration shifts.

Since the calibration shifts were mainly associated with pins of the outer row and those used as standards between separate scans (#16 and #24), these calibration shifts may be due to bundle mechanical shifts and probe usage.

Table A-I (see Appendix) summarizes the calibration results in the form of an uncertainty ($\pm$ percent) for each of the 464 probes and for

each series. The uncertainties are the maximum percent difference between pre and post calibrations of each series in the range of 0 to 1000 ppm (unless otherwise noted). The asterisk indicates an excellent probe with an uncertainty less than 5 percent; about 75 percent of all the probes for both series were in this excellent category. About 85 percent of the probes for both series had an uncertainty of less than 10 percent. Excluding the probes of the outer row pins, about 95 percent for both series had an uncertainty of less than 10 percent. The primary purpose of this detailed tabulation is so the calibration uncertainty of each reading is known. Thus, the highly reliable probe results can be selected to be used in developing and calibrating mixing models.

The uncertainties delineated in this table are consistent with the mass balance results. The poorest mass balances (up to 37% error) from all the pins were obtained with injections near the outer probes, where probe uncertainties of 30 to 50 percent were common. The best mass balances (to 13% error), were achieved in the inner channel injections where uncertainties were much less.

Each probe consisted of a single electrode immersed in the coolant stream, and the circuit was completed through the test section grounded metallic structure. The electrode's sensitivity to electrolyte concentration was localized to the volume of fluid immediately adjacent to the exposed electrode surface. The incremental voltage drop was proportional to current density, which falls off approximately as the square of the distance from the probe surface. Thus, most of the measured cell voltage drop occurs close to the single electrode surface.

If high concentration gradients existed in a channel, the sensor

reading would have been weighted toward the concentration closest to the probe. This effect is termed the striping effect throughout the text of this report. Thus, near the injection point, high intrachannel concentration gradients probably existed and probe readings were not the bulk concentration of the channels. No general accuracy can be placed on this effect. Judgment, based on the location of the sensor, grab samples and channels with duplicate probes, must be used by the reader to determine the accuracy being considered for each sensor.

Far downstream, where concentrations in adjacent channels were similar, this effect should be negligible. The good mass balances achieved after six inches indicate that this effect generally had a small effect on the absolute reading of most sensors.

III. RESULTS

The results will be discussed within the conceptual framework of the test instrumentation: to determine qualitative mixing models from upstream probes in selected channels within the first pitch and calibrate or quantify these models with massive downstream data. From the data obtained, a simplified model used in current thermal hydraulics codes was quantified and justified for many practical gross effect problems. In addition, a forced diversion crossflow model was presented. However, the lack of a thermal hydraulic code to efficiently handle such a model in large bundles prevented verification of this model with the massive downstream data.

The results are presented in three sections: a basic data section, a section which considers a model for current codes and a forced diversion model section. Finally, a section will compare the results with recent literature.

A. BASIC DATA

This section presents all the basic conductivity data in tabular form with selected runs in planar distributions, and discusses grab sample and mass balance results.

1. Tabular Presentation

All of the data for all of the runs which contain meaningful data are tabulated in Table A-III of the Appendix. The only runs not included were those considered exploratory for data verification, such as runs with no injection. The parameters and conditions of each run are

summarized in Table A-II. In general, the runs cover three flows (215, 430, and 615 gpm) at two injection concentrations (2 and 4 percent NaNO_3) and three injection flows at four injection locations. Most of the runs were at the nominal reactor assembly flow of 430 gpm.

Table A-III is a Xerox reproduction of the computer output sheets, and thus does not contain any human transposing errors. The first column is a test run identification number. The second column identifies the sensor as laid out in Figure A-4. The "P" simply stands for pin sensor instrumentation. The third column is the inlet water concentration on ppm NaNO_3 as determined by laboratory chemical analysis from water samples taken during the run. The fourth column is the gross average sensor reading already converted into ppm NaNO_3 from calibration run results. These values are averages of about 30 individual readings taken over one minute to reduce statistical variations. The final column is the incremental or net concentration (column four less column three) in ppm NaNO_3 ; these data represent the distribution of the injected salt and will be used hence forth whenever reference is made to salt concentrations from pin sensors. Each page of this table represents a scan, with six scans required per run, as discussed earlier. The pin that was to be used for a reference between scans is the last pin on each page (either P16 or P24).

The injection channel bulk concentrations of Table A-II were determined from the salt injection rate and channel flow calculated from COBRA (437 lbm/hr @ 430 gpm). The net outlet bulk concentrations were determined from grab samples taken far downstream of the bundle where well mixed conditions were expected. All concentrations in Table A-II are considered accurate to the last significant figure.

Several duplicate runs in Table A-III were taken under nominally identical mixing conditions (runs 3 and 18 or 4 and 19, for instance). A detail probe-by-probe reading inspection of these runs (considering 2/1 injection concentration differences) would yield some differences greater than those expected from the calibration uncertainties discussed earlier in Table I. These differences in specific readings are more prevalent near the wall, and are probably a result of minute mechanical shifts within the bundle due to pump starts and stops or other disturbances. Similar mechanical shifts would also occur in a fuel assembly. Minute mechanical shifts near the injection region would have perturbed the initial salt distribution, which, in turn, would have affected all readings downstream. The effect of mechanical shifts on readings would be aggravated by the striping (non uniform salt distribution within channels) effect mentioned earlier. The mass balances (as discussed later) were very consistent between runs, indicating that there were actual changes in salt or flow patterns, not probe instabilities. The readings of these runs was reduced to mixing parameters. In subsequent sections, the mixing will be shown to be very consistent in spite of these specific differences. Thus, the differences between specific readings of nominally identical runs was not significantly detract from the results of this test.

2. Planar Distributions

In order to present the basic data in a more interpretable manner than tabular form, the concentration readings in ppm NaNO_3 for each channel are displayed in transverse planes. The planes of the more significant runs are contained in Figures 4 and 5 and A5, A6, and A7

of the Appendix. All such figures are looking downstream. These planar distributions are presented at half, one, two, and three pitch distances (6, 12, 24, and 36 inches nominal) below the end of the finned injection region.

a. Interior Injection

Figure 4 shows a typical planar concentration distribution at 36 inches for interior channels. The observed concentration pattern was nominally symmetrical about the second channel to the left of the injection channel. Practically all of the salt was contained within a 5-channel radius circle around this channel. Qualitatively, the mixing appears significant, but by no means large enough to directly temper thermal effects across an entire assembly.

A significant point that should be discussed is the apparent drift of salt to the left in these figures in this interior region. This drift may be a result of a real net transport of fluid, or may be a result of the injection position in this asymmetric flow field. While these data are inconclusive as to the cause of this drift, there is considerable evidence to support the latter.

A detail inspection of the planar distributions (Figure A5) at various elevations indicates most of the drift took place in the first pitch with a nominally symmetric dispersion thereafter. A simple model, which is suggested by the data herein, is that the injection channel tracer follows the helical clockwise path of the wire wrap, depositing a significant fraction of the fluid in each channel through which it passes. Because of the injection location in this test, the helical path of the first wire wrap to pass through the injection channel (w/w of

pin #35) was to the left. After this first pitch, the fluid or salt left behind in each channel appeared to be dispersed by other wire wraps in all directions, creating a nominally symmetrical concentration pattern. It is interesting to speculate as to whether the salt pattern would have drifted to the right had the injection location been four inches upstream, where the wire wrap of pin #34 had been the first to pick up the salt solution. Such locations should be incorporated into future tests to firmly establish this injection location effect. The data, together with subsequent analyses, do not suggest any obvious mechanism for a real net transport or fluid to the left.

Even if this small drift was caused by real net fluid transport to the left parallel to the duct wall, it would not be of immediate significance in fuel design as many concerns (power skewing, cold wall effects, etc.) are important in a direction perpendicular to the wall, not parallel to the wall. In the important direction perpendicular to the wall, the concentration pattern is nominally symmetrical.

b. Injection Near the Wall

Figures 5 (at 36 inches) and A6 (at various elevations) show typical planar concentration distributions for injection near the duct wall (through pin #14). Here the salt is even more strongly spread to the left, indicating that a small wall swirl flow exists in addition to an injection position effect. A mechanism is evident for such a clockwise swirl or helical flow along the wall; the outer channels only experience a clockwise wire wrap movement, never a counter clockwise (to the right) movement.

The swirl was only effective over about 1/12 of the duct circumference in 36 inches; surely insufficient to directly temper thermal effects.

Inj P43 36 IN. DOWNSTREAM

$$C_{inj} = 4145 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 4684 \text{ ppm}$$

LOOKING DOWNSTREAM

Figure 4. Planar Concentrations, Interior Injection (ppm NaNO_3)

RUN 3 430 gpm
 Inj P14 36 IN. DOWNSTREAM
 $C_{inj} = 4145 \text{ ppm}$ $\sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 5686 \text{ ppm}$
 LOOKING DOWNSTREAM

Figure 5. Planar Concentrations, Injection Near Wall (ppm NaNO_3)

across an entire fuel assembly.

The concentration extent in a direction normal to the wall appeared about the same, though perhaps slightly less, as for the interior pattern.

Figure A7 shows the planar concentrations for injection through the wall (Header C). The trends and conclusions of this figure are consistent with the injection near the wall (P#14); a small clockwise flow along the wall.

The major qualitative conclusion from near or through the wall injection is that the anticipated swirl flow did exist; however, this clockwise movement was small.

In summary, the planar concentration distributions indicate that mixing on an overall basis is nominally symmetrical, except for a small swirl flow along the wall. The mixing is clearly insufficient to directly temper thermal effects across a fuel assembly. This mixing will be reduced to quantitative terms in subsequent sections.

3. Mass Balances

Mass balances were made to verify this conductivity technique, and to check if the salt remained in the instrumented region. The mass balances were based on the calculated NaNO_3 injection mass flow rate and are summarized in Table II for the runs analyzed. The balances were made at the first probe in the injection channel, for all probes at the 6, 12, 24 and 36-inch downstream planes, and at the bulk exit. Except for the first probe in the injection channel of some runs, these mass checks are considered good. Except for the first probe in the injection channel, the balances for the internal injection channel

TABLE II
MASS BALANCES

Case	Salt Injection Rate (lbm/hr)	Location	Measured $\uparrow$ NaNO_3 Injected $\uparrow$ NaNO_3
2	1.81	-- 6 inches 12 " 24 " 36 " Bulk exit	.78 1.16 .93 1.20 1.05
3	1.81	4-1 6 12 24 36 Bulk exit	.46 .92 1.10 1.20 1.37 1.05
4	1.81	34-1 6 12 24 36 Bulk exit	.70 .96 1.02 1.08 1.13 1.05
18	.945	4-1 6 12 24 36 Bulk exit	.68 1.08 1.32 1.13 1.27 1.03
19	.945	34-1 6 12 24 36 Bulk exit	.80 .92 1.02 1.06 1.09 1.03

runs were all within ± 13 percent, and for outer injection channel runs within ± 37 percent. The greater calibration uncertainties and striping (non uniform concentrations) in the outer channels would account for the poorer mass checks in the latter case.

In obtaining mass balances, the summation of the concentration and mass flows in each channel was required at each plane. Figures 4, 5, A5, A6 and A7 have this sum noted in the title block as

$$\sum_n c_n \frac{\dot{m}_n}{\dot{m}_{in}}$$

Where $\dot{m}_n$ and $\dot{m}_{in}$ are the mass flow rates of the nth channel and the nominal interior channel, respectively. Channels where only background readings existed were not included in this summation in order to avoid any random statistical contributions.

The low mass balances obtained at the first probe injected channel were probably a result of several factors: though a separate study (Reference 1) was made to assure a well mixed injected channel within the finned region, the first probe was 1/8 inch below the end of the finned region (which is one hydraulic diameter). Thus, some mixing would have already taken place prior to the first probe. In addition, the greater fluid drag (about 9 percent) on the channels surrounding the injection channel due to the presence of the fins would have caused a slightly larger flow rate in the injection than the calculated one used (nominal interior channel flow). The probes may have been less accurate at the high concentration readings of runs 3 and 4 due to the small slope of the calibration curve. Also, very little experience existed in this high concentration range. As a result, the injection channel concentration was

taken as the calculated injection channel concentration, rather than the first probe reading.

In summary, the mass balances generally support the validity of this conductivity method, verify that the calculated amount of salt was actually injected and indicate that the salt remained in the instrumented region.

4. Grab Samples

Grab samples were taken from outer channels at various axial positions for comparison with the respective conductivity probe readings to determine the extent of striping (non uniformity in salt concentration) in these outer channels. Other grab samples were taken circumferentially at the 36-inch level on each flat to provide additional verification of the extent of the wall swirl. The term grab sample means the withdrawal of a sample of the solution through ports in the wall. These samples were taken at a very slow rate so as not to disturb the channel conditions. These samples were bottled and their concentrations later measured in the laboratory by chemical methods.

The circumferential concentration distribution is shown in Table III for runs 17 and 18 with injection through the wall and near the wall respectively. This distribution confirms the absence of a large swirl flow, as no salt could be measured on any flat except the injection flat. Thus, the salt had not even moved 60° around the periphery of the bundle in the 36-inch length.

TABLE III
CIRCUMFERENTIAL GRAB SAMPLE DATA

Looking Downstream
Injection at Flat 1

Case	Location (Flat-Inches Downstream)	Concentration (ppm)
17	1 - 12	227
	2 - 12	0
	6 - 12	0
	1 - 24	43
	2 - 24	0
	6 - 24	0
	1 - 36	12
	2 - 36	0
	3 - 36	0
	4 - 36	0
	5 - 36	0
	6 - 36	0
18	1 - 12	338
	2 - 12	2
	6 - 12	0
	1 - 24	149
	2 - 24	0
	6 - 24	0
	1 - 36	48
	2 - 36	0

The grab samples taken for comparison with conductivity probes are presented in Table A-IV and were taken at various axial locations. The axial concentration distributions generally support the trends of the conductivity axial distributions. The differences in absolute levels between the grab samples and conductivity probes are probably due to striping in these channels. The differences were greater near the injection point where the greatest striping effects would be expected. Additional comparisons of these data will be made in the axial concentration profiles section.

In this summary, this basic data section has presented all of the basic data in tabular form, typical runs were presented in planar distributions and qualitative observations deduced. The resulting mass balances and grab sample comparisons confirm the validity of this conductivity approach, though the data in the first pitch should be considered qualitative, as striping effects were observed. The following sections will quantitize the results for application to reactor design.

B. DATA REDUCTION FOR USE IN CURRENT CODES

This section will reduce the data into mixing parameters for use in current thermal hydraulic codes with their present limitations. Thermal hydraulics analyses of FTR fuel assemblies are generally complicated enough to require the use of codes such as COBRA. Since the present thermal hydraulics workhorse code for FTR is COBRA II, the data reduction will be geared especially to it. The available current versions of this code [COBRA II (Reference 2) and COBRA IIIA (Reference 3)] do not adequately handle wire wrap forced diversion in large bundles. The only type of mixing model currently usable in COBRA is the turbulent mixing model, which assumes random or symmetrical mixing, not directional mixing. The first task is to show whether use of such a symmetrical model is at all justified for wire-wrapped assemblies.

One significant point should be emphasized. The use of a turbulent mixing model should in no way be construed to infer that wire-wrap forced diversion is physically similar to turbulent mixing on a local basis. In fact, the previous section qualitatively described the wire-wrap forced diversion as a locally clockwise sweeping of the fluid. Very directional, not random.

However, on a gross or overall basis 36 inches downstream, the salt appeared quite symmetrically dispersed about a channel two channels from the injection channel. When considering that a two-channel drift parallel to the wall is not of interest in many practical fuel assembly analyses, then a mathematically symmetric model may be of use. Furthermore, when considering that this apparent two-channel lateral drift was probably a phenomena of the particular injection location used, a symmetric model takes on a considerable amount of credibility.

Thus one should consider this data analysis as forcing the gross results into a mathematical nondirectional model, not a physical turbulent model. The model may be termed an "effective" turbulent model. The results would only be applicable for downstream on a gross basis and where the results do not depend on the actual local detail fluid path through the bundle.

A nondirectional crossflow model used in COBRA is

$$w' = \beta_e S G \quad (1)$$

where w' is the crossflow per unit axial length (lbm/hr-in), S is the hydraulic spacing between fuel pins (inches), G is the average channel mass flow rate of the two channels involved (lbm/hr-in²) and β_e is a dimensionless mixing parameter. In order to distinguish this mixing parameter from a true turbulent one (β), the subscript e was chosen for "effective". This w' defines flow in each direction between two channels; thus the absolute flow exchange is $2w'$ and net flow exchange is zero. Rearranging the above expression where ρ is the fluid density, v' the transverse crossflow velocity through the gap and v the axial channel velocity

$$\beta_e = \frac{\frac{w'}{S\rho}}{\frac{G}{\rho}} = \frac{v'}{v} \quad (2)$$

Thus, β_e represents the dimensionless crossflow velocity in gap. A logical maximum value for β_e would be the tangent of the helical angle

α that the wire wrap makes with pin

$$\beta_{e \max} = \tan \alpha = \frac{(D_p + D_w)}{p} \quad (3)$$

This value was .075 for the test section geometry.

In order to represent the fraction of channel flow mixed or diverted per unit length in terms of β_e , expression (1) need only be rearranged after introducing the cross sectional flow area of the channel (A) and the channel flow rate $\dot{m}$ (lbm/hr):

$$\frac{w'}{\dot{m}} = \frac{w'}{GA} = \frac{\beta_e}{A} S$$

S/A for the test section inner channels was about 4.2 in^{-1} ; thus, β 's of .025 and .075 would represent 10.5 and 31.5 percent (about 10 & 30%) mixing per inch per gap, respectively. An actual turbulent model would then predict that a β of .025 would mean about 30 percent mixing per inch per channel, considering that each of the three gaps operate independently.

At this point, a simple but optimistic model of wire wrap forced mixing can be proposed which suggests a magnitude for β_e . The model is simply that the wire wraps are always forcing fluid at the helical wire wrap angle α through one gap, with the crossflow in the other two gaps of that channel split to maintain a mass balance (see Figure 6). Thus, mixing would be only about 30 percent per inch per channel in the case of the forced model, as only one gap is effective. When this mixing rate is placed into the effective turbulent model terms considering three gaps,

(a) ACTUAL TURBULENT MODEL

$$w' = \beta \dot{S}m/A$$

$$\beta = 0.075$$

(b) FORCED MODEL

(c) EFFECTIVE TURBULENT MODEL

$$w' = \beta_e \dot{S}m/A$$

$$\beta_e = 0.025$$

Figure 6. Effective Turbulent Model

an effective mixing rate of about 10 percent per inch per gap is obtained, which yields a β_e of .025.

Thus, what could be considered as an optimistic model of forced diversion results in an effective β of only .025. It is interesting to keep this value in mind through the subsequent analyses.

The general approach to data reduction was to parameterize β_e using 35-channel symmetric COBRA II mockups of the vicinity around the injection point; these analytical results were then compared to the experimental data to find the β_e or range of β_e that best fits the data. While the COBRA results are presented in dimensionless concentration form, the code actually used enthalpy distribution after injection of a point (nodal) heat source into a channel of a constant property bundle. Conduction was neglected. The interior injection channel results will be compared first followed by the results of injection near the wall.

1. Interior Results

The simplest method of this approach is to use the decay of just the injection channel. Following this presentation many channels will be considered with distributions both perpendicular and parallel to the wall.

a. Injection Channel Decay

Figure 7 compares the analytical and experimental results for the decay of the injection channel. The last two data points (24 inches

and 36 inches) are for the second channel to the left. This plot shows an apparent high rate of mixing in the first four inches $\beta_e \approx .08$, which reduces to the more expected value of .015 far downstream. The apparent β_e changes very rapidly in the first pitch. Of course, mathematically, β should be constant. Its high value and variation in the first pitch was probably a result of concentration striping and inadequacy of this model in the first pitch. Apparently the model improves and striping decreases considerably after the first pitch, as β_e begins to settle to a fairly constant value. Other runs were similarly plotted and the same general conclusion reached; apparent high mixing just downstream of the injection and more realistic values ($\beta_e = .015$ to .02) far downstream.

b. Distribution Perpendicular to Wall

A more thorough test of this model is shown in Figures 8 through 13, in which all of the significant channels are brought into play. These figures show the concentration decay away from the injection channel in a direction perpendicular to the duct wall for various values of β . To center the data about the apparent center of mass of the salt, all points in these figures were translated two channels to the right (right in Figure 4).

At 36 inches, Figure 8 is for run #4 and shows that the data agree surprisingly well both in magnitude and distribution with a β_e value of about .015 to .02. The data points are slightly skewed away from the duct, which may be a result of wall damping or an injection distribution. This β_e range corresponds to total interior channel mixing rates of 20 to 25% per inch (effectively 6.6 to 8.3% per inch per gap).

c. Consistency of Results

Figure 9 shows similar results for Case #19, which was run under nominally identical conditions to Case #4 of Figure 8. Case #4 and #19 were run several weeks apart. It was noted in the basic data section that, for identical runs, some points had different readings and these differences were probably due to small mechanical shifts in the bundle. This data reduction technique allows one to verify the consistency of the data on an overall mixing basis. Figure 9 shows that the overall mixing data are very consistent, since the same trends and overall mixing value ($\beta_e = .015$ to $.02$) are exhibited as in Figure 8. This is in agreement with intuition, as one would not expect overall mixing rates to change with small shifts in the bundle configurations.

d. Distribution Parallel to Wall

Figures 10 and 11 are similar plots for Case #4 and #19 except in a direction parallel to the duct wall. Again, the data points were displaced two channels to the right. The consistency between runs on an overall mixing basis was demonstrated, with β_e from $.015$ to $.02$ providing the best fit in both figures.

Good agreement of these figures (36 inches downstream) with a symmetrical model provides additional support that the nominal two-channel drift was a result of the injection location, which caused this drift in the first pitch.

e. Axial Effects

In order to obtain an estimation of the distance downstream at which

the nondirectional model fails, Figure 12 and 13 show plots similar to Figure 9, only at 24 inches and 12 inches downstream of injection. At 24 inches, the agreement is still fair, with a β_e value between .015 and .02. However, at 12 inches, the agreement is marginal, with a β_e value between .02 and .03 indicated. Thus, a nondirectional model correlates the data well within the third pitch, is marginal in the second pitch and becomes invalid within the first pitch.

f. Independence of Reynolds Number

Because of previous unfavorable experience with conductivity probes at elevated temperatures and because a Reynolds number effect was not anticipated, these tests did not reach the nominal FTR Reynolds numbers. To demonstrate the lack of a Reynolds number effect, the flow was varied threefold (from 215 to 630 gpm) to achieve a Reynolds number range from 10,000 to 30,000. Previous figures in this section have been at 430 gpm, the nominal FTR fuel assembly flow rate.

Using the same data reduction technique as before, Figure 14 (215 gpm), Figure 15 (630 gpm) and Figure 8 (430 gpm) show identical overall mixing results ($\beta_e = .015$ to .02) for distributions perpendicular to the duct wall. Figure 16 (215 gpm), Figure 17 (630 gpm) and Figure 10 (430 gpm) also show identical mixing results for distribution parallel to the duct wall. Thus, there was no observable flow or Reynolds number effect on mixing and the mixing results obtained are considered applicable to FTR conditions. This is consistent with the lack of Reynolds' effect reported by reference 8.

2. Results Near Wall

Analyses similar to those just presented for the interior channels are shown here for the injection channel near the wall (P#14) in Figures 18 and 19. The data for the injection through the wall (Loc-C) was not reduced into quantitative form because its injection channel was not as well defined; finning the outer channel may have significantly altered a swirl flow.

Figures 18 and 19 compare the symmetrical model with the data in a direction perpendicular to the wall for duplicate runs (#3 and #18). Again, displacing the data points two channels to the right gives reasonable agreement with the symmetric model. A β_e of .015, slightly less than for the interior channels, provided the best fit to the data. This β_e value corresponds to a total outer channel mixing rate of 10% per inch (effectively 3.3% per inch per gap). Wall damping action may account for the slightly lower β_e in this region. Also, even with the variation in specific data point readings that existed near the wall, the overall mixing conclusion from both runs was the same, demonstrating the consistency of these mixing data.

Figures 20 and 21 show the results for these two runs in a direction parallel to the wall. The data points were again displaced two channels to the right. The data points are for the first row of inner channels. Clearly, in these runs, there was a lateral movement which was greater than two channels, as the data points were still skewed to the left. This additional skewing provides strong evidence for a small swirl effect along the duct wall. Additional evidence will be presented later.

The detailed figures presented on the interior channels for axial effects, independence of Reynolds number and consistency of results will not be repeated here for the outer channels. The conclusions reached from the interior channel results on these effects are considered applicable to outer channel results. The only new results from injection near the wall were the small swirl effect and slightly less overall mixing. Since the swirl was small, and most practical problems are in planes perpendicular to the wall, a symmetrical model is justified for most thermal hydraulic reactor analyses.

3. Applications

Application of these results will be considered with respect to reactor axial power distributions. The results will be compared to available sodium data and then applied to the temperature distribution across a fuel assembly.

a. Cosine Axial Distribution

The axial power distribution in a reactor is better approximated by a cosine distribution, rather than from a point source, as experimentally set up. The point source results of this test were integrated along a 36-inch axial cosine (peak/average = 1.24) to determine results more applicable to reactor analyses.

For this integration, the apparent concentrations or high mixing rates in the first pitch were assumed real; thus mixing or β_e was apparently a function of distance downstream. This assumption will be better understood after one studies the Axial Concentration Profile Section

Figure 7. Mixing Results, Injection Channel Decay

Figure 8. Mixing Results, Interior Injection Channel, Perpendicular to Duct Wall, Run #4 (36")

Figure 9. Mixing Results, Interior Injection Channel, Perpendicular to Duct Wall, Run #19 (36")

Figure 10. Mixing Results, Interior Injection Channel, Parallel to Duct Wall, Run #4 (36")

Figure 11. Mixing Results, Interior Injection Channel, Parallel to Duct Wall, RUN #19) (36")

Figure 12. Mixing Results, Interior Injection Channel, Perpendicular to Duct Wall, Run #19 (24")

Figure 13. Mixing Results, Interior Injection Channel, Perpendicular to Duct Wall, Run #19 (12")

Figure 14. Mixing Results, Interior Injection Channel, Perpendicular to Duct Wall, Run #10 (36")

Figure 15. Mixing Results, Interior Injection Channel, Perpendicular to Duct Wall, Run #14 (36")

Figure 16. Mixing Results, Interior Injection Channel, Parallel to Duct Wall, Run #10 (36").

Figure 17. Mixing Results, Interior Injection Channel, Parallel to Duct Wall, Run #14 (36")

Figure 18. Mixing Results, Injection Channel Near Wall, (Pin No. 14)
 Perpendicular to Duct Wall, Run #3 (36")

Figure 19. Mixing Results, Injection Channel Near Wall, (Pin No. 14) Perpendicular to Duct Wall, Run #18 (36")

Figure 20. Mixing Results, Injection Channel Near Wall, (Pin No. 14) Parallel to Duct Wall, Run #3 (36")

Figure 21. Mixing Results, Injection Channel Near Wall, (Pin. No. 14). Parallel to Duct Wall.
Run #18 (36")

Figure 22. Cosine Injection, Interior (36 in.)

Figure 23. Fuel Assembly Prediction

which is presented later in this report; Figure 24 of this late section was actually used for the experimental data.

Figure 22 compares the results of the turbulent mixing model weighted with a cosine axial distribution and the result of the integrated cosine weighted experimental results for an interior channel. This figure is for the direction perpendicular to the duct wall and the data points are labeled by channel. The agreement with the parameterized curves is reasonable ($\beta_e = .02$ to $.025$), though it is not as good as the data at the 24 and 36 inch locations (Figures 12 and 9, for instance).

The directional movement of the salt in the first pitch, particularly from channel 34 to 35 to 25 skewed the results. Since this skewing was enhanced by the single injection position used in the test, a more symmetrical distribution could have been obtained if the injection position effect was known and considered.

A similar integration and comparison was performed with a uniform axial distribution and the same β_e range of $.02$ to $.025$ obtained. Similar analyses near the wall were not performed, but the same mixing result or slightly less is expected.

Thus, by using the apparent concentration distribution near the point of injection, an effective β for use in gross reactor calculations was determined to be only slightly higher than the range $(.015$ to $.02)$ found from only using the downstream data. Since all evidence from this test indicates that mixing near the point of injection was less than indicated by this qualitative data, the best range of β_e from the test data is considered to be $.015$ to $.02$.

Since the natural turbulent β for these conditions is about .005 (see Equation D-22 or Ref (14) of Reference (1)) the effective mixing in this wire wrapped bundle on a gross basis was 3 to 4 times the natural turbulence level.

b. Comparison with Seven-Pin Bundle Data

In order to provide a check on the use of this effective β in sodium, the best value of β_e was deduced using COBRA II from recent 7-pin heated tests in sodium. These 7-pin tests have been reported in part in References (4) and (5). The typical inner-to-outer bulk channel temperature differences of 50 to 60°F in a nominal 7-pin bundle under average reactor power conditions was predicted by a β_e range of .01 to .015. Thermal conduction was considered in these calculations with a geometry factor of 2. The relative large wall influence in a 7-pin bundle compared to a 217-pin bundle may explain why the β_e was dampened below the .015 to .02 values. Thus, this comparison with actual sodium data supports the effective β 's values deduced from this water mixing test.

c. Fuel Assembly Application

As a typical application of these results to a reactor problem, the temperature profile across a fuel assembly with an exaggerated radial power profile was calculated using a COBRA strip model. The results with a parameterized β_e from .01 to .04 are shown in Figure 23. This figure shows that an effective β of .02 permits wall effects to extend about five channels into the bundle. Mixing is clearly insufficient to flatten the profile across the bundle to directly affect the duct wall-to-wall temperature differences. For this range of β_e , the temperature difference

from duct wall-to-wall increased from 120°F to 137°F as β_e increased from .01 to .04. This small increasing delta T trend with β_e is a result of there being more temperature rise on one side of the bundle.

In summary, this section has reduced the data into mixing terms that are usable in present thermal hydraulic codes. Though the model used is not physically realistic of wire wrap diversion on a local basis, it correlates the mixing results surprisingly well with the gross results over the length of a heated fuel assembly. Thus, the presentations in this section have justified the use of a turbulent nondirectional mixing model with an appropriate effective β for use in many practical fuel assembly thermal hydraulic analyses. The data suggests that a β_e range of .015 to .02 be used for gross effects over a 36-inch length, the lower values being used if wall considerations are being analyzed. These results compare favorably with 7-pin bundle heated tests in sodium and with the effective β of .025 deduced from a simple optimistic model that states that the fluid is moving at the helix angle of the wire wrap throughout the bundle.

This section has also pointed out the limitations in the use of such a model. It must be used with extreme caution where the effects of the actual fluid path are important and when local effects are being considered, such as with blockages, local hot spots and effects within one pitch.

Finally, this section showed that wire wrap mixing is insufficient to directly or strongly affect duct temperature differences across a fuel assembly.

C. DATA REDUCTION INTO A FORCED DIVERSION MODEL

This section reduces the data to qualitatively support more physically realistic models of wire-wrap forced diversion crossflow. While such models provide justification in themselves, it is hoped that thermal hydraulic codes will be developed to the point where they can effectively use such a forced diversion model in fuel assembly calculations. First, the data will be presented in axial concentration profiles. Next, a forced diversion crossflow model is suggested and qualitative crossflow data deduced from the axial concentration profiles.

1. Axial Concentration Profiles

Figures 24 and 25 show the dimensionless axial concentration profiles for channels surrounding the injection channel for three injection locations. It should be reiterated here that the data in the first pitch should be considered qualitative due to high intrachannel concentration gradients or striping effects. It should also be noted that data were only taken at a limited number of discrete points (2 inches, 4 inches, 6 inches....) so that curves drawn through these data points are not unique, but represent the authors' best judgment.

a. Interior Profiles

Figures 24 and 25 are for nominally duplicate runs No. 19 and No. 4 with the interior injection channel. The data and curves from these two runs, while not identical, are very similar.

Probe 35-1 was one of the few probes which completely failed. Thus, the first data point in channel 35 had to be inferred from mass balances and similar response in the respective probe (No. 5) during injection in

channel No. 14. Even though the first probe in the injection channel (No. 34) only read .7 to .8 of the injected concentration, the injection channel was considered well mixed with a concentration of 1.0, is discussed earlier. There are several important trends evident from these figures:

- The first obvious trend is the apparent rapid rate at which the wire wrap swept the fluid clockwise from the injection channel to channel 35. The word apparent is used here, since this rate appears unrealistically high because of striping effects. A crossflow of 90 percent per inch is indicated from the rate at which the injection channel was decaying. This indicates the average gap flow was at an angle three times the helical wire wrap angle. This seems unrealistic, as it is hard to imagine the flow angle being greater than the helical wire wrap angle when the wire wrap is in the gap.

Striping could have been responsible for this apparent effect, since the fresh water coming from channel No. 44 would have been thrown toward the probes in channel No. 34, giving low readings, and the salt would have followed the wire wrap past probe No. 35 (or probe No. 5 for injections near the wall) causing high readings.

Thus, the magnitude of the forced diversion was probably greatly exaggerated; however, the trend of clockwise forced diversion from 34 to 35 with the wire wrap was evident.

- The second trend is the salt or fluid following the wire wrap as it spirals around pin #35 and passes from channel #34 to #35 to 36o to 36e and to #44 in the first pitch. This order of concentration peaks is consistent in both figures. The magnitude decreases as the fluid was swept into each new channel, indicating that a significant fraction of the fluid was mixing in each channel and being left behind. This trend supports a simple descriptive model of the fluid following or being forced in a helical path with the wire wrap, leaving behind a significant portion of the fluid in each channel passed through.
- A third trend is also important. This is the peaking of the injection channel at about 8 inches where the wire wrap of pin #34 was sweeping fluid back into channel #34 from #35. This indicates that net mixing effects should be less than local mixing effects. Such a trend was shown in the previous section, as the effective mixing parameter decreased at greater distances downstream. Also, the fixed net effective β range was less than the .025 predicted from simple mixing always at the helical wire wrap angle.
- Another apparent trend that should be mentioned is the apparent lack of response by probes 23 and 42 in the first pitch. Again, this lack of response should not be

interpreted as a complete lack of salt movement into these channels. Striping effects from fresh water were probably also significant in these channels. For instance, in the first two inches, the wire wrap of pin #35 probably pushed some salt into channel 42. However, at two inches, the wire wrap of pin #43 was probably already pushing this salt back into channel 34 and had been streaming fresh water along probe 42 for the entire four inches.

These trends also demonstrate the importance of the injection position in relation to the wire wraps. If the injection position (end of finned region) had been four inches upstream, the salt would probably have been distributed in the first pitch to the right around pin #34, creating the illusion of a net fluid drift to the right. Thus, these axial concentrations yield descriptive or qualitative models which support the postulation in the previous section that the overall two-channel salt drift was an injection position phenomena, not a real net movement of fluid.

The curves in the second and third pitch are drawn smoothly for lack of sufficient data resolution to show the wiggles that must have actually existed.

b. Profiles Near Wall

Figures 26 and 27 are the axial profiles for injection through P14 for runs #18 and #3 which were run under duplicate conditions.

Figure 24. Axial Concentration Gradients, Interior Injection Channel (Pin No. (43) Run #19 (430 gpm)

Figure 25. Axial Concentration Gradients, (Interior Injection Channel)
 Pin No. 43, Run #4

Figure 26. Axial Concentration Gradients, Injection Channel Near Wall (Pin No. 14) Run #18 430 gpm)

Figure 28. Axial Concentration Gradients, Injection Through Wall, Run #2 (430 gpm, 4% NaNO_3)

Again, the trends are very consistent between these runs. Figure 28 shows the results for injection through the wall. The trends are consistent with those of Figures 26 and 27.

The ordinate in these figures is the dimensionless salt flow rate.

$$\frac{(\dot{Cm})_m}{(\dot{Cm})_{inj}}$$

Where $(\dot{Cm})_m$ is the product of the measured concentration and average channel flow rate at the indicated probe and $(\dot{Cm})_{inj}$ is the injected salt flow rate. This quantity was chosen, since the outer and inner channels have different flow rates (2.3 to 1) and such presentation better presents the salt distribution.

The injection channel concentrations in Figures 26 and 27 at the end of the finned region was also considered 1.0. The important trends evident from these three figures are:

- As in the case of the interior channel, there was an apparent large local forced diversion from channel 4 to 5 as the wire wrap sweeps through these channels. Again, as in the case of the interior channels, this effect is only qualitative, due to high intrachannel gradient effects. Of significance are the slightly lower slopes in these figures compared to those for interior injection, which indicate a damping effect by the duct wall.

- The second trend is again the fluid following or being forced along the wire wrap as it followed a helical path around pin #5, passing from channel 4 to 5 to 6 to 15o to 15e.
- The third trend is again the adjacent wire wrap (#4) having swept the fluid back into the injection channel at 8 inches, which decreases the net mixing.
- The fourth is also the apparent lack of response in the first pitch in channels 3 and 13, probably caused by striping effects.
- However, a fifth trend is observed in these outer channels. The peaks in channels 5, 6, and 7 show a consistent pattern indicating a clockwise movement, drift or swirl flow along the wall to the left. The presence of swirl flow was also evidenced by the lack of response throughout the bundle length of the outer channels to the right of the injection channel.

The uncertainties in the probes of channels 8 and 9 were such that their readings were disregarded. However, even the probe in channel 9, which was 6 outer channels to the left of injection, showed a significant increase at three pitches.

The periodicity of the peaks on the outer channels was about 7 inches. From this value, the average swirl angle can be estimated as:

$$\tan \theta = \frac{.286}{7} = .04; \quad \theta = 2.3^{\circ}$$

This angle is a little more than half of the wire wrap helical angle of 4.3° .

The injection channel through the wall of Figure 28 was not completely defined by fins, as complete finning may have affected the swirl flow. Thus, the data in the first half pitch have little significance, as the injection channel had no well-mixed starting point.

Due to the injection location and lack of fins, the events along the wall caused by the swirl occurred sooner in Figure 28 than in Figures 26 and 27. This allowed the probes to catch the peaking of channel 7, which was not evident from the relative location of the probes in Figures 26 and 27.

The extent of striping that was caused in the vicinity of this unfinned injection was shown by the lack of mass balances at the two-inch and four-inch locations; apparently the salt was following a swirl path between probe 5 and 6 in this region, and could not be read.

A limited number of grab samples were taken through the wall for comparison with the conductivity probe data. These comparisons are shown in Figures 26, 27, and 28 for all the grab samples taken; the solid points are the grab sample data.

In the first pitch, the grab samples generally supported the trends indicated by the conductivity probes, but not the magnitudes. After the first pitch, the agreement was better.

In Figure 26, where injection was into an inner channel, the wall grab samples of channel 5 were lower than the conductivity readings. This is consistent with fresh water being supplied by the swirl flow along the

wall. At 12 inches and 24 inches, the grab samples and conductivity probe readings of channel 6 were in excellent agreement. At 36 inches, the wall sample was again lower, probably due to the streaming of fresh water along the wall.

In Figure 29 with wall injection, the opposite but consistent trends are shown. The wall injection caused the wall samples to run higher in the first half a pitch, with fair agreement at 9 inches and 12 inches.

Thus, the comparison of the grab samples and conductivity data indicate that significant striping did occur in the first pitch.

The main conclusions to be drawn from the injections near the wall are:

- The forced diversions in this region were similar to those in the interior, except that the magnitudes were slightly dampened.
- There was a small swirl along the wall at an average rate of a little more than half the helical wire wrap angle.
- Wall grab samples support the quantitative trends of the conductive probes, and show that significant concentration striping effects were present in the first pitch.

The data described in this section will be further reduced into apparent crossflows in the next section.

2. Forced Diversion Crossflow Models

An important quantity needed for determining local thermal hydraulic effects in wire-wrapped bundles is the crossflow induced by wire wraps. This crossflow is required whether hand or code calculations are to be used. This section proposes a simple crossflow model and uses the experimental crossflow data to support this model. Because of the qualitative nature of the data in the first pitch, primarily due to striping effects, the deduced crossflow data should only be considered qualitative; the direction of crossflows can be considered reliable, but the absolute magnitude must await determination by the downstream data through appropriate codes. The axial data downstream of the first pitch were generally insufficient to directly determine crossflows. It is easily shown by mass conservation (and assuming channel flows are constant), that the crossflow can be determined from the axial profiles by an approximate expression such as:

$$\frac{w'_{b-c}}{\dot{m}_b} = \frac{\Delta C_b / \Delta Z}{\bar{C}_b - \frac{w'_{a-b}}{w'_{b-c}} \bar{C}_a - \frac{w'_{d-b}}{w'_{b-c}} \bar{C}_d}$$

where w'_{b-c} is the crossflow per unit length from b to c, etc., $\Delta C_b / \Delta Z$ is the slope of the axial concentration profile in channel b, $\bar{C}_a$, $\bar{C}_b$ and $\bar{C}_c$ are the respective channel average concentrations in the length ΔZ and $\dot{m}_b$ is the b-channel flow. Three simplifying cases were generally used.

- $\bar{C}_a = \bar{C}_d = 0$; first 4 inches of injection channel
- $w'_{a-b} = w'_{b-c}$, $w'_{d-b} = 0$; wire wrap in center of channel b
- $w'_{a-b} = w'_{d-b} = \frac{w'_{b-c}}{2}$; wire wrap in gap

a. Interior Crossflow Model

Figure 29 shows a logical interior crossflow model for a typical gap (between channels 34 and 35). The model is simply based on the assumption that the maximum crossflow occurs when the wire wrap is in the gap and this maximum is at the helical angle of the wire wrap. The variation at other positions is assumed sinusoidal. Thus, the maximum crossflow is

$$\frac{w'_{\max}}{\dot{m}_{in}} = \frac{\beta_e S}{A} \quad .075 (4.2) = .315 \text{ in}^{-1}$$

The average value of a sine function is $2/\pi$ times the peak value; thus

$$\frac{w'}{\dot{m}_{int}} = .315 (2/\pi) = .2 \text{ in}^{-1}$$

It is interesting to note that this corresponds to an effective β (when considering three gaps) of .016. Since this value of β_e is in the experimental range deduced in an earlier section from the symmetric model, the magnitudes of the two models are consistent.

The apparent crossflows deduced for this gap from the injection channel axial profile are also shown in Figure 29. These magnitudes

are about three times greater than predicted by the model. These apparent crossflow data suggest that the crossflow was three times the helical wire wrap angle when it was in the gap. While crossflows could have been larger than this angle when the wrap was not in the gap, such large crossflows do not appear reasonable when the wrap was in the gap. It is considered that these apparent large magnitudes were mainly a result of the striping effects, which would predict larger crossflows in the injection channel. The fresh water that reached probe 34 significantly increased the slope of the injection channel decay and thus strongly increased the deduced crossflows. Thus, the data points should only be considered qualitative. The directional trends of the data do support the crossflow model.

Figure 30 shows a composite of all the crossflows around pin #35 for this model. This figure also shows all possible interior gap crossflows as the gaps around pin #35 are typical of all interior gaps. Additional crossflow data from other channel profiles are also shown in this figure. Again, some of the data is considerably above the proposed model; however, data of channels 36o--36e, 36e--44 and 44--34 closely support the crossflow model. These data were further clockwise from the injection channel and near the end of the first pitch, where striping effects should be less important; however, there were less data to support the axial profiles of these channels. All of the data supports the directional trends of the model.

It should be noted that this sinusoidal variation permits good mass balances for each interior channel. That is, the net crossflows in or out for each channel is about zero for all axial locations.

b. Crossflow Models Near Wall

Two additional models will be considered for the crossflow around pins of the outer row. One model is for inner-to-outer channels and the other for outer-to-outer channels. The model used for inner-to-inner channels is the same as for the interior channels.

Figure 31 shows the inner-to-outer channel model. Again, this model assumes that the crossflow rate is at the angle of the wire wrap when the wire wrap is in the gap. However, the fluid being forced through the gap at the wall to the outer channels had no easy lateral path to reduce the excess flow. Looking at this in another way, a lateral mass balance in the outer channels as the fluid was being forced into them from the inner channel would require large lateral flows; such flows were not observed in the test. Thus, the axial flow must increase in the outer channels to balance the incoming crossflow. This increased flow and corresponding increased pressure would cause the incoming crossflow to decrease rapidly when the wire wrap moves away from the gap. Thus, Figure 31 shows the model dropping off faster than a sine fraction as the wrap approaches the wall; also, the flow reverses sooner to relieve this pressure. The above may be termed the wall damping effect.

As an aside, flat-to-flat pressure differences were measured in this bundle and found to be as much as one psi (or 20% of axial gradient) as shown in Figure 32. Such pressure differences further supports this wall

damping effect. Also, considering that there was considerably more flow resistance in a direction parallel to the wall than axially, these pressure data support the small swirl flow observed along the wall from the conductivity data.

The apparent crossflows deduced from the axial profiles in the injection channel are also shown in this figure. Again, these crossflows were greater than predicted by the model. The apparently larger crossflow data are again considered mainly a result of striping effects. The apparent crossflow data for the outer channels were lower than for the interior channels. Thus, this model should probably have been shown to have lower magnitudes than the interior model.

Figure 33 shows the crossflow model for the outer-to-outer channel gaps. Note that the crossflow ordinate is ratioed to the average inner channel flow rate $\dot{m}_{in}$. If one wishes to relate the crossflow rate to the average outer channel flow rate ($\dot{m}_{out}$), the calculated ratio of $\dot{m}_{out}/\dot{m}_{in}$ was 2.3. This model assumes that this crossflow is a constant in the clockwise direction at the wire wrap helical angle.

This crossflow deduced from the axial profiles agrees surprisingly well with this model, though the magnitudes are still slightly higher due to striping effect.

This outer-to-outer crossflow model is also supported by the earlier observation that the salt or fluid moves along the wall at an average swirl velocity of a little more than half the wire wrap helical angle. The average lateral crossflow area for lateral flow parallel to the wall in the outer channels is slightly less than twice the area of the gaps.

Thus, the model would predict that the average crossflow swirl velocity would be a little more than half the helical wire wrap angle, which was independently determined earlier.

Figure 34 shows a composite of the crossflows of the gaps surrounding an outer pin. The additional apparent crossflow data shown on this figure were taken further downstream and better support the inner-to-outer channel crossflow model. Due to the wall damping effect the crossflows of this model are not balanced in a lateral plane but the axial flow rate must be adjusted appropriately.

The example crossflow models chosen are probably low or conservative for the following reasons:

- The apparent crossflow data, while qualitative, consistently suggests higher crossflows than predicted by the model.
- This model does not consider additive effects from other channels or regions of a 217-pin bundle. Thus, crossflows could be higher than at the helical angle of the wire wrap when the wrap is not in the gap.
- The axial profiles indicated that the efficiency of the forced diversion was reduced by adjacent wire wraps diverting some of the fluid back into the channel from which it just came. Yet, when the internal forced diversion model was ideally converted into β_e

terms, it predicted the lower end of the β_e range observed (.016). This implies that the average value of the forced diversion model should have been greater by at least the inefficiency of this return diversion.

In summary, this section has presented the axial concentration profiles. These profiles were distorted by local interchannel concentration effects, particularly in the first pitch, as evidenced by grab samples and unrealistically high deduced crossflows. Conservative forced diversion models were suggested whose trends were supported by the qualitative crossflow data.

Figure 29. Crossflow Model, Interior (single)

Figure 30. Crossflow Model, Interior (Composite)

Figure 31. Crossflow Model, Exterior (Inner-To-Outer) Channel Mixing

Figure 32. Pressure Drop Flat-To-Flat

Figure 33. Crossflow Model, Exterior (Outer-To-Outer) Channel Mixing

Figure 34. Crossflow Model, Exterior (Composite)

IV. COMPARISON WITH LITERATURE

This section compares the results of this test with only the most recent and most applicable studies (References 6-9).

As described in Reference (6), Reihman performed a limited salt injection-grab or direct sampling test in a 217-pin wire wrapped bundle. The pins were slightly larger, .250-inch diameter, and wraps were smaller, .030-inch, than those of this test, but the wire wrap pitch was the same. Due to the limited number of direct sample probes, a mass balance could not be obtained to confirm the data. His data were all at 24 inches, and his corresponding dimensionless concentration readings at this level are shown as asterisks in Figure 12. Though the points are more scattered, they are in general agreement with the points of this test.

Reihman also attempted to separate the mixing into three separate mechanisms:

- Natural turbulent mixing,
- Flow redistribution by wire wraps altering channel flow resistance, and
- Forced diversion.

Due to the very directional mixing found locally in this test, no attempt was made to separate out mechanisms.

Reference (7) reports some results of a salt injection experiment by AI in a 217-pin bundle. Conductivity probes were placed only in the first pitch and the injection channel was not well defined or well mixed.

Thus, their data were extremely qualitative and mass balance could not be attained. This report could not be used as a basis for comparison due to the very qualitative nature of the limited data.

Marian (8) summarized a mixing test where a hot stream of water was injected into the six central channels of a 127 pin bundle and the channel responses determined by thermocouples. This bundle had similar dimensions except for a shorter wire wrap pitch of 6 inches. While insufficient data was presented for a direct comparison with the data, the paper concludes that mixing was at a total rate of 25 percent per inch per interior channel (not per gap) which is at the high end of the range of 20 to 25 percent concluded from this test. Marian's trend to be higher is reasonable since his steeper helical pitch would be expected to enhance mixing.

In reference (9) Baumann summarized the results of the Karlsruhe mixing tests in model LMFBR assemblies. Baumann used a 61-pin bundle with air as the coolant and heated the central pin. The mixing was deduced from the outlet temperature distribution. The main difference from his wire wrapped case and the one herein was that the wire wrap pitch was only 4 inches rather than 12 inches. Reference (9) reports a total mixing per interior channel (not per gap) of 45 percent per inch. This is considered in good agreement with the 20 to 25 percent per inch reported herein when considering the three to one difference in wire wrap pitch.

In summary, the recent literature, all of which used different experimental techniques, supports the mixing rates concluded from this test.

V. RECOMMENDATIONS

Recommendations for the application of mixing results and for performing future mixing tests follow:

- Present thermal hydraulic codes which incorporate an effective turbulent mixing model and interchannel conduction such as COBRA can be employed for LMFBR fuel assembly analyses. For gross effects involving two or more pitches, and where the local fluid path is unimportant, a β_e range of .015 to .02 is recommended for fuel assemblies having geometries similar to the FTR bundle. A β_e range of .015 is recommended for conservative analyses, considering minimal mixing effects or effects near the wall; .02 is recommended for optimistic mixing analyses or interior mixing effects.
- Since many previous FTR and LMFBR analyses have employed high β_e 's (up to .06) it is recommended that such analyses be reviewed in light of the demonstrated lower mixing.
- Use of present codes which only consider effective turbulent mixing models is not recommended for local thermal hydraulic analyses when directional forced diversion effects may be important. Forced diversion effects may be significant at local internal blockages, local hot spots and where localized cooling occurs in safety analyses.
- Code development should be continued to generate thermal hydraulic codes which can effectively accommodate forced diversion crossflow models in large bundles. Such codes and crossflow models should then be verified by comparing their predictions with the extensive downstream data herein.

- Future mixing tests incorporating salt tracer-internal conductivity probe techniques should consider complimentary detailed bench studies of the interaction of striping and probe response. It is doubtful whether significant additional results can be obtained from such techniques until this inherent effect is better understood.
- In addition, future testing should consider other injection locations relative to the wire wrap to confirm that the apparent interior channel drift was only an injection position phenomena.

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VII. NOMENCLATURE

English

A	Cross-sectional flow area of a channel
C	NaNO_3 concentration (ppm)
C_{inj}	Bulk concentration in injection channel at end of fins (ppm)
C_m	Measured concentration in indicated channel
C'	Dimensionless concentration C/C_{inj}
D	Diameter (inches)
D_p	Simulated fuel pin diameter (inches)
P_w	Wire wrap diameter (inches)
G	Channel mass flow rate per unit area (average of two adjacent mixing channels) ($\text{lb}_m/\text{hr-in}^2$)
$\dot{m}$	Flow rate (lb_m/hr)
$\dot{m}_{inj}$	Injection channel flow rate (lb_m/hr)
$\dot{m}_{in}$	Average flow rate of inner channels lb_m/hr
$\dot{m}_{out}$	Average flow rate of outer channels (lb_m/hr)
S	Gap spacing between pins (inches)
v	Axial channel velocity (ft/sec)
v'	Transverse crossflow velocity (ft/sec)
w'	Crossflow per unit axial length ($\text{lb}_m/\text{hr-in}$)
Z	Axial length (inches)

Greek

α	Helical angle wire wrap makes with pin (deg)
β	Dimensionless mixing parameter for natural turbulence
β_e	Effective mixing parameter for wire-wrapped bundle
ρ	Fluid density (lb_m/in^3)
θ	Average swirl flow angle in outer channels (deg)

APPENDIX

TABLE A-I

CALIBRATION RESULTS

(from 0 to 1000 ppm unless otherwise stated)

Probe No.	Uncertainty (+ %)		Probe No.	Uncertainty (+ %)	
	Series #1	Series #2		Series #1	Series #2
1-1	10	60	6-1	*	*
-2	10	100	-2	*	20
-3	30	*	-3	10	10
-4	*	50	-4	40	*
-5	10	30	-5	*	*
-6	20	*	-6	10	10
-7	20	20	-7	*	*
-8	20	* *	-8	10	50
2-1	*	*	7-1	10	10
-2	*	*	-2	100	--
-3	*	100	-3	50	50
-4	*	10	-4	10	10
-5	*	20	-5	20	50
-6	10	*	-6	20	50
-7	20	*	-7	10	*
-8	*	*	-8	40	30
3-1	20	20	8-1	10	*
-2	20	80	-2	10	*
-3	10	*	-3	*	10
-4	10	20	-4	30	30
-5	50	100	-5	10	--
-6	30	40	-6	30	*
-7	*	*	-7	70	70
-8	10	20	-8	30	100
4-1	10 (0-2000 ppm)	10	9-1	*	*
-2	10	20	-2	50	30
-3	150	*	-3	10	10
-4	20	10	-4	*	40
-5	*	*	-5	20	--
-6	30	*	-6	30	50
-7	30	10	-7	30	40
-8	40	*	-8	40	--
5-1	*	30	10-1	*	10
-2	10	*	-2	*	20
-3	30	*	-3	20	20
-4	*	20	-4	60	10
-5	*	*	-5	30	10
-6	*	50	-6	20	10
-7	20	*	-7	80	*
-8	50	50	-8	40	100

* <5%

-- >200%

TABLE A-I (cont'd)

Probe No.	Uncertainty (+ %)		Probe No.	Uncertainty (+ %)	
	Series #1	Series #2		Series #1	Series #2
11-1	*	*	17-1	*	10
-2	*	*	-2	10	10
-3	*	*	-3	10	10
-4	*	*	-4	*	*
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	20
-8	*	*	-8	*	10
12-1	*	*	18-1	*	*
-2	*	*	-2	*	*
-3	*	*	-3	*	*
-4	*	*	-4	*	10
-5	*	*	-5	*	*
-6	*	*	-6	*	10
-7	*	*	-7	*	*
-8	*	*	-8	*	*
13-1	*	*	19-1	*	10
-2	*	*	-2	*	*
-3	*	10	-3	*	*
-4	*	*	-4	*	10
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	10	-7	*	10
-8	20	40	-8	*	10
15-1	*	*	20-1	*	*
-2	*	*	-2	*	10
-3	*	*	-3	*	10
-4	*	*	-4	*	*
-5	10	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	10
16-1	*	*	21-1	*	*
-2	10	70	-2	*	*
-3	10	30	-3	*	*
-4	*	50	-4	*	20
-5	*	70	-5	*	*
-6	*	20	-6	*	*
-7	20	40	-7	*	*
-8	*	50	-8	*	*

TABLE A-I (cont)

Probe No.	Uncertainty (+ %)		Probe No.	Uncertainty (+ %)	
	Series #1	Series #2		Series #1	Series #2
22-1	*	10	27-1	*	10
-2	*	*	-2	*	*
-3	*	*	-3	*	*
-4	*	*	-4	*	10
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
23-1	*	*	28-1	*	*
-2	*	*	-2	*	*
-3	*	*	-3	20	10
-4	*	10	-4	*	*
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	10	-8	*	*
24-1	10	*	29-1	*	*
-2	30	*	-2	*	*
-3	30	*	-3	*	*
-4	120	*	-4	*	*
-5	60	*	-5	*	*
-6	40	10	-6	*	*
-7	20	10	-7	*	*
-8	20	*	-8	*	*
25-1	*	*	30-1	*(0-2000 ppm)*	
-2	*	*	-2	*	*
-3	*	*	-3	*	*
-4	*	10	-4	*	*
-5	*	10	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
26-1	*	*	31-1	10	*
-2	10	*	-2	*	10
-3	*	*	-3	*	*
-4	*	*	-4	*	*
-5	*	*	-5	*	*
-6	*	20	-6	*	*
-7	*	10	-7	40	20
-8	*	10	-8	*	*

TABLE A-1 (Cont'd)

Probe No.	Uncertainty (+ %)		Probe No.	Uncertainty (+ %)	
	Series #1	Series #2		Series #1	Series #2
32-1	20	10	37-1	*	10
-2	*	*	-2	*	*
-3	*	*	-3	*	*
-4	*	*	-4	*	20
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
33-1	*	*	38-1	*	*
-2	10	10	-2	*	*
-3	10	10	-3	*	*
-4	60	*	-4	*	*
-5	*	*	-5	*	*
-6	*	*	-6	*	10
-7	*	*	-7	*	*
-8	*	*	-8	*	*
34-1	*(0-2000 ppm)	10	40-1	10	*
-2	20	10	-2	*	*
-3	*	*	-3	*	*
-4	20	*	-4	*	*
-5	*	*	-5	*	*
-6	30	10	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
35-1	--	--	41-1	*	*
-2	10	20	-2	*	*
-3	10	20	-3	*	*
-4	*	10	-4	*	*
-5	10	10	-5	*	*
-6	*	20	-6	*	*
-7	*	20	-7	*	10
-8	*	*	-8	*	*
36-1	10	10	42-1	*	*
-2	10	*	-2	10	*
-3	10	*	-3	30	*
-4	*	*	-4	*	10
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*

TABLE A-1 (cont)

Probe No.	Uncertainty (+%)		Probe No.	Uncertainty (+%)	
	Series #1	Series #2		Series #1	Series #2
44-1	*	*	49-1	*	*
-2	*	*	-2	*	*
-3	*	40	-3	*	*
-4	*	*	-4	*	*
-5	*	20	-5	*	*
-6	10	10	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
45-1	*	*	50-1	*	*
-2	*	*	-2	*	*
-3	*	*	-3	*	*
-4	*	*	-4	*	10
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	10	10
46-1	*	*	51-1	*	*
-2	*	*	-2	*	*
-3	*	*	-3	*	*
-4	*	*	-4	*	*
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
47-1	*	*	52-1	*	*
-2	20	*	-2	*	*
-3	*	10	-3	*	20
-4	20	*	-4	*	*
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	10	-7	*	*
-8	*	*	-8	*	*
48-1	*	*	53-1	*	*
-2	*	*	-2	*	*
-3	*	*	-3	20	*
-4	*	*	-4	*	*
-5	*	*	-5	20	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*

TABLE A-1 (concl)

Probe No.	Uncertainty (+ %)		Probe No.	Uncertainty (+ %)	
	Series #1	Series #2		Series #1	Series #2
54-1	*	*	59-1	*	*
-2	*	*	-2	*	*
-3	*	*	-3	*	*
-4	20	*	-4	*	*
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
55-1	*	*	60-1	20	20
-2	*	*	-2	*	30
-3	*	*	-3	50	--
-4	*	*	-4	*	*
-5	*	*	-5	*	*
-6	*	*	-6	*	*
-7	*	*	-7	*	*
-8	*	*	-8	*	*
56-1	*	*	61-1	*	*
-2	*	*	-2	*	*
-3	*	*	-3	10	*
-4	*	*	-4	*	10
-5	*	*	-5	*	10
-6	*	*	-6	10	10
-7	*	*	-7	*	10
-8	*	10	-8	*	10
57-1	*	*			
-2	10	*			
-3	50	*			
-4	10	*			
-5	*	*			
-6	60	*			
-7	*	*			
-8	30	*			
58-1	*	*			
-2	10	10			
-3	*	*			
-4	*	*			
-5	20	*			
-6	*	*			
-7	*	*			
-8	*	*			

TABLE A-II
SUMMARY OF RUN CONDITIONS

Run Or Case No.	Inj Location	Inj Conc (ppm)	Inj Flow (gpm)	Inj Channel Bulk Conc (ppm)	Net Outlet Bulk Conc (ppm)	TS Flow (gpm)
1	no injection		--	--	--	430
2	Wall-c	39,910	.09	1802	8.92	430
3	P14	39,910	.09	4145	8.88	430
4	P43	39,910	.09	4145	8.95	430
5	P39	39,910	.09	4145	9.04	430
6	P14	39,910	.135	6218	12.92	430
7	no injection		--	--	--	215
8	P14	39,910	.045	4145	8.40	215
9	P14	39,910	.09	8290	17.05	215
10	P43	39,910	.045	4145	8.60	215
11	P43	39,910	.09	8290	17.95	215
12	no injection		--	--	--	615
13	P14	39,910	.135	4347	8.80	615
14	P43	39,910	.135	4347	--	615
15	no injection		--	--	--	215
16	no injection		--	--	--	430
17	Wall-c	20,840	.09	941	4.55	430
18	P14	20,840	.09	2165	4.55	430
19	P43	20,840	.09	2165	4.54	430

TABLE A-III
BASIC DATA IN TABULAR FORM

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040830	P1-1	10.38	14.597	4.217
040830	P1-2	10.38	15.098	4.718
040830	P1-3	10.38	21.444	11.114
040830	P1-4	10.38	15.428	5.048
040830	P1-5	10.38	13.058	2.678
040830	P1-6	10.38	16.658	6.278
040830	P1-7	10.38	20.091	9.711
040830	P1-8	10.38	13.954	3.574
040830	P2-1	10.38	16.699	6.319
040830	P2-2	10.38	14.779	4.399
040830	P2-3	10.38	12.980	2.600
040830	P2-4	10.38	16.813	6.433
040830	P2-5	10.38	17.645	7.265
040830	P2-6	10.38	13.341	2.961
040830	P2-7	10.38	15.076	5.296
040830	P2-8	10.38	6.622	3.758
040830	P3-1	10.38	14.767	4.387
040830	P3-2	10.38	18.640	8.260
040830	P3-3	10.38	15.988	5.608
040830	P3-4	10.38	17.474	7.094
040830	P3-5	10.38	20.643	10.263
040830	P3-6	10.38	16.303	5.923
040830	P3-7	10.38	20.473	10.093
040830	P3-8	10.38	9.798	5.582
040830	P4-1	10.38	14.202	3.822
040830	P4-2	10.38	30.186	19.786
040830	P4-3	10.38	38.278	27.898
040830	P4-4	10.38	54.047	43.667
040830	P4-5	10.38	42.592	32.212
040830	P4-6	10.38	50.112	39.732
040830	P4-7	10.38	52.798	42.418
040830	P4-8	10.38	28.845	18.465
040830	P5-1	10.38	281.915	271.535
040830	P5-2	10.38	126.819	116.439
040830	P5-3	10.38	103.345	93.005
040830	P5-4	10.38	144.676	134.296
040830	P5-5	10.38	90.877	80.497
040830	P5-6	10.38	111.043	100.714
040830	P5-7	10.38	69.967	59.587
040830	P5-8	10.38	76.994	66.524
040830	P6-1	10.38	96.318	85.938
040830	P6-2	10.38	81.848	71.468
040830	P6-3	10.38	801.411	91.031
040830	P6-4	10.38	859.795	849.325
040830	P6-5	10.38	457.537	447.157
040830	P6-6	10.38	381.718	371.338
040830	P6-7	10.38	184.214	173.834
040830	P6-8	10.38	98.821	88.441
040830	P7-1	10.38	80.445	70.115
040830	P7-2	10.38	129.945	119.565
040830	P7-3	10.38	466.216	455.836
040830	P7-4	10.38	124.241	113.861
040830	P7-5	10.38	143.594	133.214
040830	P7-6	10.38	194.868	184.428
040830	P7-7	10.38	155.617	145.237
040830	P7-8	10.38	210.341	199.961
040830	P8-1	10.38	38.608	28.228
040830	P8-2	10.38	58.450	48.070
040830	P8-3	10.38	238.447	228.067
040830	P8-4	10.38	70.005	59.625
040830	P8-5	10.38	175.738	165.358
040830	P8-6	10.38	96.630	86.250
040830	P8-7	10.38	157.330	146.950
040830	P8-8	10.38	149.113	138.733
040830	P9-1	10.38	80.596	70.216
040830	P9-2	10.38	41.720	31.340
040830	P9-3	10.38	42.062	31.682
040830	P9-4	10.38	42.220	31.840
040830	P9-5	10.38	118.920	108.540
040830	P9-6	10.38	70.075	59.695
040830	P9-7	10.38	308.862	298.482
040830	P9-8	10.38	90.672	80.292
040830	P10-1	10.38	15.635	5.255
040830	P10-2	10.38	8.896	-1.484
040830	P10-3	10.38	9.802	-5.578
040830	P10-4	10.38	15.680	5.300
040830	P10-5	10.38	14.965	4.585
040830	P10-6	10.38	14.316	3.936
040830	P10-7	10.38	16.350	5.970
040830	P10-8	10.38	13.407	3.027
040830	P24-1	10.38	18.051	7.671
040830	P24-2	10.38	18.695	8.315
040830	P24-3	10.38	31.758	21.388
040830	P24-4	10.38	63.534	53.154
040830	P24-5	10.38	69.386	59.006
040830	P24-6	10.38	51.900	41.520
040830	P24-7	10.38	89.197	78.817
040830	P24-8	10.38	81.568	71.188

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040831	P11-1	10.38	8.347	-2.033
040831	P11-2	10.38	10.453	.073
040831	P11-3	10.38	10.778	.398
040831	P11-4	10.38	9.348	-.992
040831	P11-5	10.38	10.320	-.060
040831	P11-6	10.38	9.353	-1.027
040831	P11-7	10.38	8.462	-1.918
040831	P11-8	10.38	9.702	-.678
040831	P12-1	10.38	9.096	-1.284
040831	P12-2	10.38	13.838	3.458
040831	P12-3	10.38	12.012	1.632
040831	P12-4	10.38	9.766	-.614
040831	P12-5	10.38	11.621	1.241
040831	P12-6	10.38	11.822	1.442
040831	P12-7	10.38	15.694	5.314
040831	P12-8	10.38	12.310	1.930
040831	P13-1	10.38	22.454	12.074
040831	P13-2	10.38	19.271	8.891
040831	P13-3	10.38	48.758	38.378
040831	P13-4	10.38	37.340	26.960
040831	P13-5	10.38	24.447	14.067
040831	P13-6	10.38	23.395	13.015
040831	P13-7	10.38	26.493	16.113
040831	P13-8	10.38	14.294	3.914
040831	P15-1	10.38	73.619	63.239
040831	P15-2	10.38	53.347	42.967
040831	P15-3	10.38	316.073	305.693
040831	P15-4	10.38	225.638	215.258
040831	P15-5	10.38	286.008	275.628
040831	P15-6	10.38	188.977	178.597
040831	P15-7	10.38	209.206	198.826
040831	P15-8	10.38	140.805	130.425
040831	P16-1	10.38	86.614	76.234
040831	P16-2	10.38	70.977	60.597
040831	P16-3	10.38	343.747	333.407
040831	P16-4	10.38	113.091	102.711
040831	P16-5	10.38	403.903	393.523
040831	P16-6	10.38	232.755	222.375
040831	P16-7	10.38	244.889	234.509
040831	P16-8	10.38	189.121	178.741
..				
040831	P17-1	10.38	57.655	47.275
040831	P17-2	10.38	24.137	13.757
040831	P17-3	10.38	71.277	60.897
040831	P17-4	10.38	47.919	37.539
040831	P17-5	10.38	208.042	197.662
040831	P17-6	10.38	53.270	42.890
040831	P17-7	10.38	218.801	208.421
040831	P17-8	10.38	144.329	133.949
040831	P18-1	10.38	23.318	12.938
040831	P18-2	10.38	25.524	15.144
040831	P18-3	10.38	26.901	16.521
040831	P18-4	10.38	30.518	20.138
040831	P18-5	10.38	82.709	72.329
040831	P18-6	10.38	36.351	25.971
040831	P18-7	10.38	195.901	185.521
040831	P18-8	10.38	100.371	89.991
040831	P19-1	10.38	24.966	14.586
040831	P19-2	10.38	30.465	20.085
040831	P19-3	10.38	22.469	12.089
040831	P19-4	10.38	24.597	14.217
040831	P19-5	10.38	37.655	27.275
040831	P19-6	10.38	25.693	15.313
040831	P19-7	10.38	157.869	147.489
040831	P19-8	10.38	174.872	164.492
040831	P20-1	10.38	13.351	2.971
040831	P20-2	10.38	12.379	1.999
040831	P20-3	10.38	9.848	-.492
040831	P20-4	10.38	10.558	.178
040831	P20-5	10.38	13.133	2.753
040831	P20-6	10.38	12.646	2.286
040831	P20-7	10.38	11.170	.790
040831	P20-8	10.38	12.533	2.153
040831	P21-1	10.38	9.134	-1.246
040831	P21-2	10.38	8.847	-1.533
040831	P21-3	10.38	11.013	.633
040831	P21-4	10.38	7.433	-2.947
040831	P21-5	10.38	10.569	.189
040831	P21-6	10.38	10.703	.323
040831	P21-7	10.38	12.376	1.996
040831	P21-8	10.38	8.209	-2.171
040831	P24-1	10.38	17.473	7.093
040831	P24-2	10.38	19.545	9.205
040831	P24-3	10.38	28.672	18.292
040831	P24-4	10.38	56.843	46.463
040831	P24-5	10.38	61.612	51.232
040831	P24-6	10.38	60.644	50.304
040831	P24-7	10.38	83.810	73.430
040831	P24-8	10.38	78.215	67.835

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040832	P22-1	10.38	13.358	2.978
040832	P22-2	10.38	12.076	1.696
040832	P22-3	10.38	13.421	3.041
040832	P22-4	10.38	12.916	2.536
040832	P22-5	10.38	15.346	4.966
040832	P22-6	10.38	14.115	3.735
040832	P22-7	10.38	14.499	4.119
040832	P22-8	10.38	15.595	5.215
040832	P23-1	10.38	20.430	10.050
040832	P23-2	10.38	18.169	7.789
040832	P23-3	10.38	29.225	18.845
040832	P23-4	10.38	33.342	22.962
040832	P23-5	10.38	24.012	13.632
040832	P23-6	10.38	26.304	15.924
040832	P23-7	10.38	33.148	22.768
040832	P23-8	10.38	41.255	30.875
040832	P25-1	10.38	14.228	3.848
040832	P25-2	10.38	13.690	3.310
040832	P25-3	10.38	15.332	4.952
040832	P25-4	10.38	13.096	2.716
040832	P25-5	10.38	15.104	4.724
040832	P25-6	10.38	14.997	4.617
040832	P25-7	10.38	22.183	11.803
040832	P25-8	10.38	50.610	40.230
040832	P26-1	10.38	28.656	18.276
040832	P26-2	10.38	22.901	12.521
040832	P26-3	10.38	36.735	26.355
040832	P26-4	10.38	32.893	22.513
040832	P26-5	10.38	94.713	84.333
040832	P26-6	10.38	76.532	66.152
040832	P26-7	10.38	119.614	109.434
040832	P26-8	10.38	94.853	84.473
040832	P27-1	10.38	21.636	11.256
040832	P27-2	10.38	17.627	7.247
040832	P27-3	10.38	21.815	11.435
040832	P27-4	10.38	21.159	10.779
040832	P27-5	10.38	30.998	20.618
040832	P27-6	10.38	24.085	14.305
040832	P27-7	10.38	103.248	92.868
040832	P27-8	10.38	49.155	38.775
040832	P28-1	10.38	15.876	5.496
040832	P28-2	10.38	16.315	5.935
040832	P28-3	10.38	13.917	3.537
040832	P28-4	10.38	18.933	8.553
040832	P28-5	10.38	16.521	6.141
040832	P28-6	10.38	19.520	9.140
040832	P28-7	10.38	94.917	84.537
040832	P28-8	10.38	36.627	26.247
040832	P29-1	10.38	20.751	10.371
040832	P29-2	10.38	18.625	8.245
040832	P29-3	10.38	17.107	6.727
040832	P29-4	10.38	18.532	8.152
040832	P29-5	10.38	16.973	6.593
040832	P29-6	10.38	13.973	3.593
040832	P29-7	10.38	42.154	31.774
040832	P29-8	10.38	40.135	29.755
040832	P30-1	10.38	14.042	3.662
040832	P30-2	10.38	11.351	.971
040832	P30-3	10.38	11.254	.874
040832	P30-4	10.38	10.826	.446
040832	P30-5	10.38	11.482	1.102
040832	P30-6	10.38	11.107	.727
040832	P30-7	10.38	12.011	1.631
040832	P30-8	10.38	11.438	1.058
040832	P31-1	10.38	11.934	1.554
040832	P31-2	10.38	12.804	2.424
040832	P31-3	10.38	12.033	1.653
040832	P31-4	10.38	11.868	1.508
040832	P31-5	10.38	12.155	1.775
040832	P31-6	10.38	12.530	2.150
040832	P31-7	10.38	13.235	2.855
040832	P31-8	10.38	12.892	2.512
040832	P24-1	10.38	21.548	11.168
040832	P24-2	10.38	29.040	18.660
040832	P24-3	10.38	34.017	23.637
040832	P24-4	10.38	66.656	56.276
040832	P24-5	10.38	48.644	38.314
040832	P24-6	10.38	66.032	55.652
040832	P24-7	10.38	90.397	80.017
040832	P24-8	10.38	82.329	71.949

36. TEF L

37. SELECT CAL24

PARAMETER TABLE CAL24 LOADED.

38. READ BCL DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040833	P32-1	10.38	9.994	-.386
040833	P32-2	10.38	10.014	-.366
040833	P32-3	10.38	9.810	-.570
040833	P32-4	10.38	9.769	-.611
040833	P32-5	10.38	11.978	1.598
040833	P32-6	10.38	11.337	.957
040833	P32-7	10.38	11.118	.738
040833	P32-8	10.38	12.529	2.149
040833	P33-1	10.38	11.956	1.576
040833	P33-2	10.38	11.867	1.487
040833	P33-3	10.38	12.968	2.588
040833	P33-4	10.38	16.095	5.715
040833	P33-5	10.38	11.917	1.537
040833	P33-6	10.38	12.300	1.920
040833	P33-7	10.38	12.998	2.618
040833	P33-8	10.38	11.742	1.402
040833	P34-1	10.38	11.540	1.160
040833	P34-2	10.38	10.112	-.268
040833	P34-3	10.38	9.376	1.004
040833	P34-4	10.38	9.599	-.781
040833	P34-5	10.38	9.752	-.628
040833	P34-6	10.38	10.189	-.191
040833	P34-7	10.38	11.652	1.272
040833	P34-8	10.38	11.028	.648
040833	P35-1	10.38	14.094	3.714
040833	P35-2	10.38	10.307	-.073
040833	P35-3	10.38	10.887	.507
040833	P35-4	10.38	10.857	.477
040833	P35-5	10.38	11.234	.854
040833	P35-6	10.38	10.615	.435
040833	P35-7	10.38	12.755	2.375
040833	P35-8	10.38	23.865	13.485
040833	P36-1	10.38	15.586	5.206
040833	P36-2	10.38	13.563	3.183
040833	P36-3	10.38	15.981	5.601
040833	P36-4	10.38	14.935	4.555
040833	P36-5	10.38	28.547	18.167
040833	P36-6	10.38	17.320	6.940
040833	P36-7	10.38	47.028	36.648
040833	P36-8	10.38	22.000	11.620
040833	P37-1	10.38	13.076	2.696
040833	P37-2	10.38	11.585	1.205
040833	P37-3	10.38	14.967	4.587
040833	P37-4	10.38	13.109	2.729
040833	P37-5	10.38	18.556	8.176
040833	P37-6	10.38	14.057	4.277
040833	P37-7	10.38	43.656	33.276
040833	P37-8	10.38	35.174	24.794
040833	P38-1	10.38	12.699	2.319
040833	P38-2	10.38	12.452	2.072
040833	P38-3	10.38	10.884	.504
040833	P38-4	10.38	12.430	2.050
040833	P38-5	10.38	11.792	1.412
040833	P38-6	10.38	12.401	2.021
040833	P38-7	10.38	19.263	8.883
040833	P38-8	10.38	16.969	6.529
040833	P40-1	10.38	10.463	.083
040833	P40-2	10.38	9.982	-.398
040833	P40-3	10.38	10.570	.190
040833	P40-4	10.38	11.658	1.278
040833	P40-5	10.38	13.294	2.914
040833	P40-6	10.38	11.632	1.252
040833	P40-7	10.38	12.566	2.186
040833	P40-8	10.38	11.826	1.446
040833	P41-1	10.38	11.339	.959
040833	P41-2	10.38	10.776	.396
040833	P41-3	10.38	10.745	.365
040833	P41-4	10.38	10.469	.089
040833	P41-5	10.38	14.640	4.260
040833	P41-6	10.38	11.123	.743
040833	P41-7	10.38	13.225	2.845
040833	P41-8	10.38	12.076	1.696
040833	P42-1	10.38	10.022	-.358
040833	P42-2	10.38	8.689	-1.691
040833	P42-3	10.38	10.964	.584
040833	P42-4	10.38	10.013	-.367
040833	P42-5	10.38	10.272	-.108
040833	P42-6	10.38	10.468	-.112
040833	P42-7	10.38	9.402	-.978
040833	P42-8	10.38	11.685	1.305
040833	P24-1	10.38	21.869	11.489
040833	P24-2	10.38	22.332	11.952
040833	P24-3	10.38	32.438	22.058
040833	P24-4	10.38	62.253	51.873
040833	P24-5	10.38	64.912	54.532
040833	P24-6	10.38	63.069	52.689
040833	P24-7	10.38	80.772	70.392
040833	P24-8	10.38	83.146	72.806

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040834	P44-1	10.38	87.959	77.579
040834	P44-2	10.38	12.954	8.574
040834	P44-3	10.38	13.609	3.229
040834	P44-4	10.38	12.735	2.355
040834	P44-5	10.38	16.606	6.226
040834	P44-6	10.38	14.254	3.874
040834	P44-7	10.38	21.676	11.296
040834	P44-8	10.38	25.510	15.130
040834	P45-1	10.38	15.341	5.001
040834	P45-2	10.38	12.840	2.460
040834	P45-3	10.38	15.349	4.969
040834	P45-4	10.38	13.779	3.399
040834	P45-5	10.38	13.416	3.036
040834	P45-6	10.38	14.118	3.738
040834	P45-7	10.38	17.595	7.215
040834	P45-8	10.38	14.401	4.021
040834	P46-1	10.38	14.459	4.079
040834	P46-2	10.38	14.340	3.960
040834	P46-3	10.38	12.348	1.968
040834	P46-4	10.38	11.934	1.554
040834	P46-5	10.38	12.171	1.791
040834	P46-6	10.38	12.551	2.171
040834	P46-7	10.38	13.295	2.915
040834	P46-8	10.38	10.607	.227
040834	P47-1	10.38	11.943	1.563
040834	P47-2	10.38	12.038	1.658
040834	P47-3	10.38	12.318	1.938
040834	P47-4	10.38	11.555	1.175
040834	P47-5	10.38	12.526	2.146
040834	P47-6	10.38	12.781	2.401
040834	P47-7	10.38	11.911	1.531
040834	P47-8	10.38	11.715	1.335
040834	P48-1	10.38	12.619	2.239
040834	P48-2	10.38	11.255	.875
040834	P48-3	10.38	12.286	1.906
040834	P48-4	10.38	11.049	.669
040834	P48-5	10.38	12.413	2.033
040834	P48-6	10.38	10.715	.335
040834	P48-7	10.38	11.974	1.594
040834	P48-8	10.38	13.291	2.911
040834	P49-1	10.38	11.533	1.153
040834	P49-2	10.38	13.057	2.677
040834	P49-3	10.38	11.443	1.063
040834	P49-4	10.38	12.920	2.540
040834	P49-5	10.38	13.149	2.769
040834	P49-6	10.38	8.431	-1.949
040834	P49-7	10.38	12.949	2.569
040834	P49-8	10.38	14.022	3.642
040834	P50-1	10.38	12.600	2.220
040834	P50-2	10.38	13.046	2.706
040834	P50-3	10.38	13.438	3.058
040834	P50-4	10.38	12.761	2.381
040834	P50-5	10.38	13.071	2.691
040834	P50-6	10.38	13.325	2.945
040834	P50-7	10.38	11.511	1.131
040834	P50-8	10.38	12.006	1.626
040834	P51-1	10.38	14.215	3.835
040834	P51-2	10.38	12.893	2.513
040834	P51-3	10.38	13.996	3.616
040834	P51-4	10.38	15.866	5.486
040834	P51-5	10.38	13.671	3.291
040834	P51-6	10.38	14.136	3.756
040834	P51-7	10.38	13.797	3.417
040834	P51-8	10.38	14.334	3.954
040834	P52-1	10.38	13.944	3.564
040834	P52-2	10.38	12.392	2.012
040834	P52-3	10.38	13.135	2.755
040834	P52-4	10.38	13.385	3.005
040834	P52-5	10.38	11.461	1.081
040834	P52-6	10.38	12.674	2.294
040834	P52-7	10.38	12.838	2.458
040834	P52-8	10.38	12.688	2.308
040834	P53-1	10.38	11.625	1.245
040834	P53-2	10.38	11.156	.776
040834	P53-3	10.38	11.174	.794
040834	P53-4	10.38	11.116	.736
040834	P53-5	10.38	12.663	2.283
040834	P53-6	10.38	12.024	1.644
040834	P53-7	10.38	11.946	1.566
040834	P53-8	10.38	12.061	1.681
040834	P54-1	10.38	20.164	9.724
040834	P54-2	10.38	27.810	17.430
040834	P54-3	10.38	35.557	25.177
040834	P54-4	10.38	68.212	57.832
040834	P54-5	10.38	70.546	60.166
040834	P54-6	10.38	62.766	52.386
040834	P54-7	10.38	93.219	82.839
040834	P54-8	10.38	85.722	75.342

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040835	P54-1	10.38	10.780	.400
040835	P54-2	10.38	12.037	1.657
040835	P54-3	10.38	11.149	.769
040835	P54-4	10.38	12.402	2.022
040835	P54-5	10.38	11.802	1.422
040835	P54-6	10.38	12.331	1.951
040835	P54-7	10.38	12.249	1.869
040835	P54-8	10.38	15.786	5.406
040835	P55-1	10.38	11.671	1.291
040835	P55-2	10.38	13.167	2.787
040835	P55-3	10.38	16.291	5.911
040835	P55-4	10.38	13.591	3.211
040835	P55-5	10.38	11.943	1.563
040835	P55-6	10.38	11.777	1.397
040835	P55-7	10.38	14.537	4.157
040835	P55-8	10.38	12.581	2.201
040835	P56-1	10.38	16.049	5.669
040835	P56-2	10.38	12.697	2.317
040835	P56-3	10.38	12.076	1.696
040835	P56-4	10.38	11.941	1.561
040835	P56-5	10.38	11.172	.792
040835	P56-6	10.38	13.259	2.879
040835	P56-7	10.38	11.030	.650
040835	P56-8	10.38	10.579	.199
040835	P57-1	10.38	9.855	-.525
040835	P57-2	10.38	10.660	.280
040835	P57-3	10.38	10.478	.098
040835	P57-4	10.38	10.693	.313
040835	P57-5	10.38	12.720	2.340
040835	P57-6	10.38	11.349	.969
040835	P57-7	10.38	14.965	4.585
040835	P57-8	10.38	9.930	-.450
040835	P58-1	10.38	10.465	.085
040835	P58-2	10.38	11.850	1.470
040835	P58-3	10.38	11.250	.870
040835	P58-4	10.38	13.756	3.376
040835	P58-5	10.38	11.014	.634
040835	P58-6	10.38	12.098	1.718
040835	P58-7	10.38	9.370	-1.010
040835	P58-8	10.38	14.237	3.857
040835	P59-1	10.38	16.491	6.111
040835	P59-2	10.38	16.853	6.473
040835	P59-3	10.38	13.791	3.411
040835	P59-4	10.38	17.664	7.284
040835	P59-5	10.38	14.825	4.445
040835	P59-6	10.38	10.644	.264
040835	P59-7	10.38	16.048	5.668
040835	P59-8	10.38	16.350	5.970
040835	P60-1	10.38	13.127	2.747
040835	P60-2	10.38	10.468	.088
040835	P60-3	10.38	13.029	2.649
040835	P60-4	10.38	14.946	4.566
040835	P60-5	10.38	13.638	3.258
040835	P60-6	10.38	14.155	3.775
040835	P60-7	10.38	12.888	2.508
040835	P60-8	10.38	12.930	2.550
040835	P61-1	10.38	13.424	3.044
040835	P61-2	10.38	12.682	2.302
040835	P61-3	10.38	12.654	2.274
040835	P61-4	10.38	16.483	6.103
040835	P61-5	10.38	13.426	3.046
040835	P61-6	10.38	13.577	3.197
040835	P61-7	10.38	12.752	2.372
040835	P61-8	10.38	17.142	6.762
040835	P24-1	10.38	21.177	10.797
040835	P24-2	10.38	24.216	13.836
040835	P24-3	10.38	31.788	21.408
040835	P24-4	10.38	65.824	55.444
040835	P24-5	10.38	66.647	56.317
040835	P24-6	10.38	62.546	52.166
040835	P24-7	10.38	85.198	74.818
040835	P24-8	10.38	84.253	73.873

45. TEF D

46. SELECT CAD21

PARAMETER TABLE CAD21 LOADED.

47. READ BCL DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040830	P1-1	10.31	8.947	-1.363
040830	P1-2	10.31	10.364	0.054
040830	P1-3	10.31	15.644	5.334
040830	P1-4	10.31	14.665	4.355
040830	P1-5	10.31	10.518	0.208
040830	P1-6	10.31	15.152	4.842
040830	P1-7	10.31	20.930	10.620
040830	P1-8	10.31	12.112	1.802
040830	P2-1	10.31	19.721	9.411
040830	P2-2	10.31	16.058	5.748
040830	P2-3	10.31	18.284	7.974
040830	P2-4	10.31	19.835	9.525
040830	P2-5	10.31	16.385	6.075
040830	P2-6	10.31	19.157	8.847
040830	P2-7	10.31	20.869	10.559
040830	P2-8	10.31	15.440	5.130
040830	P3-1	10.31	26.458	16.148
040830	P3-2	10.31	23.894	13.584
040830	P3-3	10.31	26.131	15.821
040830	P3-4	10.31	23.106	12.796
040830	P3-5	10.31	49.183	38.873
040830	P3-6	10.31	53.734	23.424
040830	P3-7	10.31	41.671	31.361
040830	P3-8	10.31	20.086	9.776
040830	P4-1	10.31	1904.769	1894.459
040830	P4-2	10.31	946.118	935.808
040830	P4-3	10.31	334.812	324.502
040830	P4-4	10.31	549.257	538.947
040830	P4-5	10.31	273.664	263.354
040830	P4-6	10.31	278.138	267.828
040830	P4-7	10.31	421.689	411.379
040830	P4-8	10.31	163.192	152.882
040830	P5-1	10.31	473.216	462.906
040830	P5-2	10.31	614.166	603.856
040830	P5-3	10.31	489.911	479.601
040830	P5-4	10.31	677.559	667.249
040830	P5-5	10.31	420.815	410.505
040830	P5-6	10.31	431.687	421.557
040830	P5-7	10.31	258.957	248.647
040830	P5-8	10.31	282.178	271.868
040830	P6-1	10.31	82.174	71.864
040830	P6-2	10.31	90.763	80.453
040830	P6-3	10.31	429.823	419.513
040830	P6-4	10.31	876.686	866.376
040830	P6-5	10.31	651.481	641.171
040830	P6-6	10.31	421.202	410.892
040830	P6-7	10.31	344.401	334.181
040830	P6-8	10.31	191.845	181.535
040830	P7-1	10.31	66.417	56.107
040830	P7-2	10.31	172.012	161.702
040830	P7-3	10.31	282.800	272.490
040830	P7-4	10.31	100.603	90.293
040830	P7-5	10.31	285.696	275.386
040830	P7-6	10.31	181.311	171.001
040830	P7-7	10.31	187.929	177.619
040830	P7-8	10.31	188.100	177.790
040830	P8-1	10.31	30.961	20.651
040830	P8-2	10.31	26.569	16.259
040830	P8-3	10.31	68.043	57.733
040830	P8-4	10.31	31.474	21.164
040830	P8-5	10.31	105.912	95.602
040830	P8-6	10.31	64.622	54.312
040830	P8-7	10.31	196.283	185.973
040830	P8-8	10.31	127.197	116.887
040830	P9-1	10.31	52.246	41.936
040830	P9-2	10.31	18.424	8.114
040830	P9-3	10.31	13.710	3.400
040830	P9-4	10.31	26.536	16.226
040830	P9-5	10.31	39.560	29.250
040830	P9-6	10.31	28.082	17.772
040830	P9-7	10.31	162.120	151.810
040830	P9-8	10.31	162.120	151.810
040830	P10-1	10.31	14.870	4.560
040830	P10-2	10.31	7.958	-2.352
040830	P10-3	10.31	8.940	-1.370
040830	P10-4	10.31	14.777	4.467
040830	P10-5	10.31	12.365	2.055
040830	P10-6	10.31	10.311	.001
040830	P10-7	10.31	14.841	4.531
040830	P10-8	10.31	12.800	2.490
040830	P24-1	10.31	32.324	22.014
040830	P24-2	10.31	42.048	31.738
040830	P24-3	10.31	65.274	54.964
040830	P24-4	10.31	184.246	173.936
040830	P24-5	10.31	170.949	160.639
040830	P24-6	10.31	130.363	120.053
040830	P24-7	10.31	185.229	175.519
040830	P24-8	10.31	173.200	162.890

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040837	P11-1	10.31	7.264	-3.026
040837	P11-2	10.31	9.535	-.775
040837	P11-3	10.31	7.570	-2.740
040837	P11-4	10.31	8.911	-1.399
040837	P11-5	10.31	12.498	2.188
040837	P11-6	10.31	9.058	-1.252
040837	P11-7	10.31	8.393	-1.917
040837	P11-8	10.31	11.100	.790
040837	P12-1	10.31	8.489	-1.821
040837	P12-2	10.31	15.470	5.160
040837	P12-3	10.31	13.513	3.203
040837	P12-4	10.31	11.059	.749
040837	P12-5	10.31	12.713	2.403
040837	P12-6	10.31	18.022	7.712
040837	P12-7	10.31	28.839	18.529
040837	P12-8	10.31	24.310	14.000
040837	P13-1	10.31	81.447	71.137
040837	P13-2	10.31	74.819	64.509
040837	P13-3	10.31	258.136	247.826
040837	P13-4	10.31	184.603	174.293
040837	P13-5	10.31	93.749	83.439
040837	P13-6	10.31	92.567	82.257
040837	P13-7	10.31	94.580	84.270
040837	P13-8	10.31	28.377	18.067
040837	P15-1	10.31	74.887	64.577
040837	P15-2	10.31	63.323	53.013
040837	P15-3	10.31	201.928	191.618
040837	P15-4	10.31	374.097	363.787
040837	P15-5	10.31	296.275	285.965
040837	P15-6	10.31	308.265	297.955
040837	P15-7	10.31	265.151	254.841
040837	P15-8	10.31	215.962	205.672
040837	P16-1	10.31	62.271	51.961
040837	P16-2	10.31	64.835	54.525
040837	P16-3	10.31	232.903	222.593
040837	P16-4	10.31	59.962	49.652
040837	P16-5	10.31	298.618	288.308
040837	P16-6	10.31	141.722	131.412
040837	P16-7	10.31	218.362	208.052
040837	P16-8	10.31	183.539	173.229
040837	P17-1	10.31	40.296	29.986
040837	P17-2	10.31	16.754	6.444
040837	P17-3	10.31	31.088	20.778
040837	P17-4	10.31	30.077	19.767
040837	P17-5	10.31	109.734	99.424
040837	P17-6	10.31	31.795	21.485
040837	P17-7	10.31	170.478	160.168
040837	P17-8	10.31	102.767	92.457
040837	P18-1	10.31	17.454	7.144
040837	P18-2	10.31	17.708	7.398
040837	P18-3	10.31	20.370	10.060
040837	P18-4	10.31	20.579	10.269
040837	P18-5	10.31	27.028	16.718
040837	P18-6	10.31	18.072	7.762
040837	P18-7	10.31	107.007	96.697
040837	P18-8	10.31	56.253	45.943
040837	P19-1	10.31	15.590	5.280
040837	P19-2	10.31	15.736	5.426
040837	P19-3	10.31	15.547	5.237
040837	P19-4	10.31	14.882	4.572
040837	P19-5	10.31	16.944	6.634
040837	P19-6	10.31	13.936	3.626
040837	P19-7	10.31	48.188	37.878
040837	P19-8	10.31	50.094	39.784
040837	P20-1	10.31	13.770	3.460
040837	P20-2	10.31	13.736	3.426
040837	P20-3	10.31	10.222	-.088
040837	P20-4	10.31	10.834	.524
040837	P20-5	10.31	14.743	4.433
040837	P20-6	10.31	13.459	3.149
040837	P20-7	10.31	10.550	.240
040837	P20-8	10.31	13.404	3.094
040837	P21-1	10.31	8.713	-1.597
040837	P21-2	10.31	7.961	-2.329
040837	P21-3	10.31	11.900	1.590
040837	P21-4	10.31	8.752	-1.558
040837	P21-5	10.31	12.646	2.336
040837	P21-6	10.31	12.114	1.804
040837	P21-7	10.31	14.019	3.709
040837	P21-8	10.31	10.374	.064
040837	P24-1	10.31	35.795	25.485
040837	P24-2	10.31	48.147	37.837
040837	P24-3	10.31	62.010	51.700
040837	P24-4	10.31	185.410	175.100
040837	P24-5	10.31	166.287	155.977
040837	P24-6	10.31	181.266	170.956
040837	P24-7	10.31	173.391	163.081
040837	P24-8	10.31	173.539	163.229

TEST CONDITIONS: FLOW:4306PM INJ:0.096PM 4% NANOS TO P14 CASE 3

TEST ID PIN-SENSOR

BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
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040838	P22-1	10.31	15.614	5.304
040838	P22-2	10.31	15.060	4.750
040838	P22-3	10.31	26.614	16.304
040838	P22-4	10.31	30.360	20.050
040838	P22-5	10.31	27.182	16.872
040838	P22-6	10.31	25.899	15.589
040838	P22-7	10.31	34.517	24.207
040838	P22-8	10.31	34.455	24.145
040838	P23-1	10.31	53.074	42.764
040838	P23-2	10.31	38.029	27.719
040838	P23-3	10.31	121.583	111.273
040838	P23-4	10.31	149.677	139.367
040838	P23-5	10.31	73.640	63.330
040838	P23-6	10.31	92.120	81.810
040838	P23-7	10.31	94.208	83.898
040838	P23-8	10.31	122.946	112.636
040838	P25-1	10.31	15.986	5.676
040838	P25-2	10.31	14.236	3.926
040838	P25-3	10.31	18.131	7.821
040838	P25-4	10.31	13.578	3.268
040838	P25-5	10.31	18.636	8.326
040838	P25-6	10.31	17.931	7.621
040838	P25-7	10.31	37.841	27.531
040838	P25-8	10.31	89.010	79.300
040838	P26-1	10.31	22.685	12.375
040838	P26-2	10.31	19.399	9.089
040838	P26-3	10.31	27.986	17.676
040838	P26-4	10.31	20.103	15.793
040838	P26-5	10.31	51.948	41.638
040838	P26-6	10.31	45.917	35.607
040838	P26-7	10.31	112.765	102.455
040838	P26-8	10.31	93.306	82.996
040838	P27-1	10.31	18.348	8.078
040838	P27-2	10.31	14.711	4.401
040838	P27-3	10.31	17.955	7.645
040838	P27-4	10.31	17.201	6.891
040838	P27-5	10.31	17.413	7.103
040838	P27-6	10.31	17.248	6.938
040838	P27-7	10.31	61.923	51.613
040838	P27-8	10.31	32.595	22.285

040838	P28-1	10.31	11.908	1.678
040838	P28-2	10.31	12.155	1.845
040838	P28-3	10.31	11.304	.994
040838	P28-4	10.31	14.343	4.033
040838	P28-5	10.31	13.434	3.124
040838	P28-6	10.31	15.218	4.908
040838	P28-7	10.31	28.432	18.122
040838	P28-8	10.31	17.920	7.610
040838	P29-1	10.31	16.741	6.431
040838	P29-2	10.31	15.421	5.111
040838	P29-3	10.31	15.196	4.886
040838	P29-4	10.31	14.479	4.169
040838	P29-5	10.31	14.066	3.756
040838	P29-6	10.31	12.222	1.912
040838	P29-7	10.31	17.848	7.594
040838	P29-8	10.31	15.937	5.627
040838	P30-1	10.31	13.598	3.288
040838	P30-2	10.31	11.274	.964
040838	P30-3	10.31	10.768	.458
040838	P30-4	10.31	10.699	.389
040838	P30-5	10.31	10.569	.259
040838	P30-6	10.31	11.332	1.022
040838	P30-7	10.31	11.613	1.303
040838	P30-8	10.31	10.698	.388
040838	P31-1	10.31	11.322	1.012
040838	P31-2	10.31	11.228	.918
040838	P31-3	10.31	11.153	.843
040838	P31-4	10.31	10.775	.465
040838	P31-5	10.31	11.214	.904
040838	P31-6	10.31	10.971	.661
040838	P31-7	10.31	12.674	2.364
040838	P31-8	10.31	12.197	1.887
040838	P24-1	10.31	40.946	30.676
040838	P24-2	10.31	58.046	47.776
040838	P24-3	10.31	67.047	56.737
040838	P24-4	10.31	194.257	183.947
040838	P24-5	10.31	109.846	99.536
040838	P24-6	10.31	174.444	164.134
040838	P24-7	10.31	182.741	172.471
040838	P24-8	10.31	178.099	167.789

PARAMETER TABLE CARD24 LOADED.

55. SELECT CARD24

56. MENU ALL DATA ON E

TEST CONDITIONS: FLOW:4.30GPM IN:0.09GPM 4% NaNO3 TO P14 CASE 3

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040839	P32-1	10.31	13.867	3.557
040839	P32-2	10.31	11.682	1.372
040839	P32-3	10.31	12.496	2.186
040839	P32-4	10.31	11.667	1.357
040839	P32-5	10.31	13.785	3.475
040839	P32-6	10.31	14.102	3.792
040839	P32-7	10.31	14.330	4.020
040839	P32-8	10.31	18.556	8.246
040839	P33-1	10.31	25.210	14.900
040839	P33-2	10.31	23.604	13.294
040839	P33-3	10.31	24.031	13.721
040839	P33-4	10.31	73.793	63.483
040839	P33-5	10.31	27.630	17.320
040839	P33-6	10.31	26.797	16.487
040839	P33-7	10.31	28.404	18.094
040839	P33-8	10.31	31.762	21.452
040839	P34-1	10.31	14.245	3.935
040839	P34-2	10.31	12.051	1.741
040839	P34-3	10.31	11.299	.989
040839	P34-4	10.31	12.105	1.795
040839	P34-5	10.31	13.622	3.312
040839	P34-6	10.31	11.723	1.413
040839	P34-7	10.31	20.602	10.292
040839	P34-8	10.31	14.160	3.850
040839	P35-1	10.31	13.343	3.033
040839	P35-2	10.31	11.701	1.391
040839	P35-3	10.31	13.917	3.607
040839	P35-4	10.31	14.081	3.771
040839	P35-5	10.31	14.995	4.685
040839	P35-6	10.31	16.018	5.708
040839	P35-7	10.31	19.879	9.569
040839	P35-8	10.31	53.138	42.824
040839	P36-1	10.31	17.139	6.829
040839	P36-2	10.31	15.816	5.506
040839	P36-3	10.31	18.526	8.216
040839	P36-4	10.31	16.710	6.400
040839	P36-5	10.31	27.788	17.478
040839	P36-6	10.31	19.717	9.407
040839	P36-7	10.31	62.664	52.354
040839	P36-8	10.31	27.146	16.836

040839	P37-1	10.31	12.176	1.866
040839	P37-2	10.31	12.198	1.888
040839	P37-3	10.31	14.790	4.480
040839	P37-4	10.31	13.439	3.129
040839	P37-5	10.31	15.848	5.538
040839	P37-6	10.31	15.935	5.625
040839	P37-7	10.31	38.432	28.122
040839	P37-8	10.31	32.710	22.400
040839	P38-1	10.31	14.249	3.939
040839	P38-2	10.31	13.802	3.492
040839	P38-3	10.31	12.539	2.229
040839	P38-4	10.31	15.208	4.898
040839	P38-5	10.31	12.285	1.975
040839	P38-6	10.31	13.218	2.908
040839	P38-7	10.31	14.928	4.618
040839	P38-8	10.31	15.018	4.708
040839	P40-1	10.31	11.609	1.299
040839	P40-2	10.31	10.539	.829
040839	P40-3	10.31	12.455	2.145
040839	P40-4	10.31	12.763	2.453
040839	P40-5	10.31	16.554	6.244
040839	P40-6	10.31	12.080	1.770
040839	P40-7	10.31	10.365	6.055
040839	P40-8	10.31	12.443	2.133
040839	P41-1	10.31	14.573	4.263
040839	P41-2	10.31	13.496	3.186
040839	P41-3	10.31	13.168	2.858
040839	P41-4	10.31	13.012	2.702
040839	P41-5	10.31	15.681	5.371
040839	P41-6	10.31	13.376	3.066
040839	P41-7	10.31	17.382	7.072
040839	P41-8	10.31	16.930	6.620
040839	P42-1	10.31	9.870	-4.440
040839	P42-2	10.31	8.877	-1.433
040839	P42-3	10.31	10.397	.087
040839	P42-4	10.31	11.748	1.438
040839	P42-5	10.31	10.808	.498
040839	P42-6	10.31	11.903	1.593
040839	P42-7	10.31	8.638	-1.672
040839	P42-8	10.31	17.614	7.304
040839	P28-1	10.31	44.887	34.577
040839	P28-2	10.31	45.204	34.894
040839	P28-3	10.31	69.731	59.421
040839	P28-4	10.31	202.790	192.480
040839	P28-5	10.31	175.501	164.991
040839	P28-6	10.31	198.811	188.501
040839	P28-7	10.31	187.426	177.116
040839	P28-8	10.31	184.127	173.817

TEST CONDITIONS: FLOW:430GPM INJ:0.196PPM 4% NANOS TO P14 CASE 3

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040840	P44-1	10.31	59.115	48.805
040840	P44-2	10.31	16.603	6.293
040840	P44-3	10.31	13.132	2.822
040840	P44-4	10.31	11.421	1.111
040840	P44-5	10.31	14.437	4.127
040840	P44-6	10.31	13.347	3.077
040840	P44-7	10.31	17.850	7.540
040840	P44-8	10.31	24.444	14.174
040840	P45-1	10.31	12.949	2.639
040840	P45-2	10.31	11.774	1.468
040840	P45-3	10.31	13.736	3.426
040840	P45-4	10.31	12.308	1.998
040840	P45-5	10.31	11.369	1.059
040840	P45-6	10.31	13.064	3.354
040840	P45-7	10.31	15.754	5.444
040840	P45-8	10.31	14.564	4.254
040840	P46-1	10.31	12.137	1.827
040840	P46-2	10.31	11.743	1.433
040840	P46-3	10.31	10.743	.473
040840	P46-4	10.31	11.369	1.059
040840	P46-5	10.31	11.315	1.005
040840	P46-6	10.31	11.028	.718
040840	P46-7	10.31	11.773	1.463
040840	P46-8	10.31	10.773	.463
040840	P47-1	10.31	9.634	-.676
040840	P47-2	10.31	10.814	.504
040840	P47-3	10.31	10.054	-.256
040840	P47-4	10.31	11.028	.718
040840	P47-5	10.31	10.897	.587
040840	P47-6	10.31	11.010	.708
040840	P47-7	10.31	10.798	.488
040840	P47-8	10.31	11.098	.788
040840	P48-1	10.31	11.111	.801
040840	P48-2	10.31	10.239	-.071
040840	P48-3	10.31	11.519	1.209
040840	P48-4	10.31	10.641	.331
040840	P48-5	10.31	11.520	1.210
040840	P48-6	10.31	10.465	.155
040840	P48-7	10.31	11.063	.753
040840	P48-8	10.31	12.319	2.009

040840	P49-1	10.31	11.282	.972	
040840	P49-2	10.31	12.155	1.845	
040840	P49-3	10.31	11.104	.794	
040840	P49-4	10.31	11.539	1.229	
040840	P49-5	10.31	11.809	1.499	
040840	P49-6	10.31	7.559	-2.751	
040840	P49-7	10.31	11.283	.973	
040840	P49-8	10.31	13.306	2.996	
040840	P50-1	10.31	11.089	.779	
040840	P50-2	10.31	12.548	2.248	
040840	P50-3	10.31	11.615	1.305	
040840	P50-4	10.31	10.615	.305	
040840	P50-5	10.31	11.524	1.014	
040840	P50-6	10.31	11.908	1.598	
040840	P50-7	10.31	10.357	.047	
040840	P50-8	10.31	11.052	.742	
040840	P51-1	10.31	13.209	2.899	
040840	P51-2	10.31	13.040	2.770	
040840	P51-3	10.31	13.375	3.065	
040840	P51-4	10.31	13.588	3.278	
040840	P51-5	10.31	12.446	2.176	
040840	P51-6	10.31	12.922	2.612	
040840	P51-7	10.31	13.667	3.357	
040840	P51-8	10.31	14.867	4.557	
040840	P52-1	10.31	12.304	1.994	
040840	P52-2	10.31	12.215	1.905	
040840	P52-3	10.31	12.708	2.398	
040840	P52-4	10.31	12.050	1.740	
040840	P52-5	10.31	10.416	.106	
040840	P52-6	10.31	12.130	1.820	
040840	P52-7	10.31	12.440	2.140	
040840	P52-8	10.31	12.519	2.209	
040840	P53-1	10.31	11.103	.793	
040840	P53-2	10.31	12.077	1.767	
040840	P53-3	10.31	10.763	.453	
040840	P53-4	10.31	11.049	.779	
040840	P53-5	10.31	12.423	2.113	
040840	P53-6	10.31	10.942	.672	
040840	P53-7	10.31	11.076	.766	
040840	P53-8	10.31	11.593	1.263	
040840	P24-1	10.31	36.446	28.136	
040840	P24-2	10.31	51.948	41.648	
040840	P24-3	10.31	69.521	59.211	
040840	P24-4	10.31	210.594	200.234	
040840	P24-5	10.31	183.174	172.804	
040840	P24-6	10.31	182.503	172.193	
040840	P24-7	10.31	189.046	174.736	
040840	P24-8	10.31	184.357	174.047	

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040841	P54-1	10.31	8.729	-1.581
040841	P54-2	10.31	9.142	-1.168
040841	P54-3	10.31	7.785	-2.525
040841	P54-4	10.31	10.705	.395
040841	P54-5	10.31	7.118	-3.192
040841	P54-6	10.31	9.786	-.524
040841	P54-7	10.31	8.576	-1.734
040841	P54-8	10.31	12.073	1.763
040841	P55-1	10.31	8.348	-1.962
040841	P55-2	10.31	9.439	-.871
040841	P55-3	10.31	11.792	1.482
040841	P55-4	10.31	7.896	-2.414
040841	P55-5	10.31	8.146	-2.164
040841	P55-6	10.31	9.294	-1.016
040841	P55-7	10.31	10.815	.505
040841	P55-8	10.31	8.859	-1.451
040841	P56-1	10.31	13.475	3.165
040841	P56-2	10.31	8.370	-1.940
040841	P56-3	10.31	9.744	-.566
040841	P56-4	10.31	9.730	-.580
040841	P56-5	10.31	8.728	-1.582
040841	P56-6	10.31	12.298	1.988
040841	P56-7	10.31	9.803	-.507
040841	P56-8	10.31	10.252	-.058
040841	P57-1	10.31	7.330	-2.980
040841	P57-2	10.31	8.413	-1.897
040841	P57-3	10.31	9.556	-.754
040841	P57-4	10.31	9.946	-.364
040841	P57-5	10.31	10.614	.304
040841	P57-6	10.31	9.791	-.519
040841	P57-7	10.31	13.055	2.745
040841	P57-8	10.31	8.857	-1.453
040841	P58-1	10.31	7.905	-2.405
040841	P58-2	10.31	9.809	-.501
040841	P58-3	10.31	9.117	-1.193
040841	P58-4	10.31	10.709	.399
040841	P58-5	10.31	8.106	-2.204
040841	P58-6	10.31	8.610	-1.700
040841	P58-7	10.31	6.491	-3.819
040841	P58-8	10.31	10.343	.033
040841	P59-1	10.31	15.073	4.763
040841	P59-2	10.31	13.946	3.636
040841	P59-3	10.31	11.337	1.027
040841	P59-4	10.31	16.233	5.923
040841	P59-5	10.31	16.572	6.262
040841	P59-6	10.31	8.192	-2.118
040841	P59-7	10.31	13.862	3.552
040841	P59-8	10.31	14.574	4.264
040841	P60-1	10.31	10.358	.048
040841	P60-2	10.31	9.276	-1.034
040841	P60-3	10.31	12.085	1.775
040841	P60-4	10.31	12.629	2.319
040841	P60-5	10.31	12.659	2.349
040841	P60-6	10.31	12.370	2.060
040841	P60-7	10.31	9.031	-1.279
040841	P60-8	10.31	10.954	.644
040841	P61-1	10.31	11.995	1.685
040841	P61-2	10.31	11.603	1.293
040841	P61-3	10.31	11.430	1.120
040841	P61-4	10.31	13.775	3.465
040841	P61-5	10.31	12.530	2.220
040841	P61-6	10.31	11.926	1.616
040841	P61-7	10.31	10.294	-.016
040841	P61-8	10.31	15.035	4.725
040841	P24-1	10.31	41.059	30.749
040841	P24-2	10.31	42.316	32.006
040841	P24-3	10.31	65.822	55.512
040841	P24-4	10.31	199.298	188.988
040841	P24-5	10.31	175.968	165.598
040841	P24-6	10.31	180.219	169.909
040841	P24-7	10.31	177.851	167.541
040841	P24-8	10.31	180.943	170.633

63. REF C

64. SELECT CAL21

PARAMETER TABLE CAL21 LOADED.

65. READ BCD DATA ON E

TEST CONDITIONS: FLOW:4306PM IN:10.096PM 4X PANOS TO P43 CASE 4

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040842	P1-1	10.58	10.209	-1.171
040842	P1-2	10.58	9.370	-1.010
040842	P1-3	10.58	9.677	-1.703
040842	P1-4	10.58	7.864	-2.516
040842	P1-5	10.58	8.337	-2.043
040842	P1-6	10.58	7.091	-3.289
040842	P1-7	10.58	10.856	.476
040842	P1-8	10.58	7.749	-2.631
040842	P2-1	10.58	15.149	4.769
040842	P2-2	10.58	10.508	.128
040842	P2-3	10.58	9.834	-.546
040842	P2-4	10.58	9.354	-1.026
040842	P2-5	10.58	14.547	4.167
040842	P2-6	10.58	11.381	1.001
040842	P2-7	10.58	10.294	-.086
040842	P2-8	10.58	5.839	-4.541
040842	P3-1	10.58	12.908	2.528
040842	P3-2	10.58	15.579	5.199
040842	P3-3	10.58	13.057	2.677
040842	P3-4	10.58	13.437	3.057
040842	P3-5	10.58	14.873	4.493
040842	P3-6	10.58	8.747	-1.633
040842	P3-7	10.58	11.382	1.002
040842	P3-8	10.58	12.162	1.782
040842	P4-1	10.58	5.110	-5.270
040842	P4-2	10.58	5.110	-5.270
040842	P4-3	10.58	6.444	-3.896
040842	P4-4	10.58	6.424	-3.896
040842	P4-5	10.58	6.484	-3.896
040842	P4-6	10.58	6.743	-3.597
040842	P4-7	10.58	9.336	-1.044
040842	P4-8	10.58	6.843	-3.537
040842	P5-1	10.58	6.843	-3.537
040842	P5-2	10.58	3.419	-6.961
040842	P5-3	10.58	5.349	-5.031
040842	P5-4	10.58	4.233	-6.147
040842	P5-5	10.58	2.607	-7.773
040842	P5-6	10.58	11.875	1.495
040842	P5-7	10.58	7.737	-2.643

040842	P6-1	10.58	6.693	-3.687
040842	P6-2	10.58	6.951	-1.429
040842	P6-3	10.58	8.840	-1.540
040842	P6-4	10.58	8.840	-1.540
040842	P6-5	10.58	8.626	-1.754
040842	P6-6	10.58	5.706	-3.674
040842	P6-7	10.58	5.407	-4.973
040842	P6-8	10.58	10.436	.056
040842	P7-1	10.58	6.122	-4.258
040842	P7-2	10.58	6.336	-4.044
040842	P7-3	10.58	3.648	-6.732
040842	P7-4	10.58	9.002	-1.378
040842	P7-5	10.58	9.002	-1.378
040842	P7-6	10.58	7.393	-2.987
040842	P7-7	10.58	4.311	-6.069
040842	P7-8	10.58	3.873	-6.507
040842	P8-1	10.58	12.445	2.065
040842	P8-2	10.58	8.620	-1.760
040842	P8-3	10.58	8.764	-1.612
040842	P8-4	10.58	4.725	-5.655
040842	P8-5	10.58	5.449	-4.911
040842	P8-6	10.58	9.405	-.975
040842	P8-7	10.58	6.169	-4.211
040842	P8-8	10.58	4.698	-5.682
040842	P9-1	10.58	7.515	-2.865
040842	P9-2	10.58	5.902	-4.478
040842	P9-3	10.58	6.343	-3.997
040842	P9-4	10.58	10.465	.085
040842	P9-5	10.58	4.211	-6.169
040842	P9-6	10.58	7.293	-3.087
040842	P9-7	10.58	7.103	-3.277
040842	P9-8	10.58	4.237	-1.937
040842	P10-1	10.58	4.249	-6.131
040842	P10-2	10.58	5.278	-5.102
040842	P10-3	10.58	7.599	-2.781
040842	P10-4	10.58	10.104	-.276
040842	P10-5	10.58	9.474	-.906
040842	P10-6	10.58	9.267	-1.113
040842	P10-7	10.58	11.235	.855
040842	P10-8	10.58	10.093	-.287
040842	P24-1	10.58	51.121	40.741
040842	P24-2	10.58	138.379	127.999
040842	P24-3	10.58	44.245	33.865
040842	P24-4	10.58	33.151	22.771
040842	P24-5	10.58	64.818	54.438
040842	P24-6	10.58	26.369	15.989
040842	P24-7	10.58	32.562	22.212
040842	P24-8	10.58	27.522	17.142

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040843	P11-1	10.38	8.240	-2.140
040843	P11-2	10.38	9.620	-0.760
040843	P11-3	10.38	9.048	-1.332
040843	P11-4	10.38	8.132	-2.248
040843	P11-5	10.38	9.865	-0.515
040843	P11-6	10.38	9.128	-1.252
040843	P11-7	10.38	7.763	-2.637
040843	P11-8	10.38	8.692	-1.688
040843	P12-1	10.38	10.693	.313
040843	P12-2	10.38	12.351	1.971
040843	P12-3	10.38	11.614	1.234
040843	P12-4	10.38	10.537	.157
040843	P12-5	10.38	12.326	1.946
040843	P12-6	10.38	11.909	1.529
040843	P12-7	10.38	14.252	3.872
040843	P12-8	10.38	10.882	.502
040843	P13-1	10.38	14.325	3.945
040843	P13-2	10.38	15.676	5.296
040843	P13-3	10.38	13.302	2.922
040843	P13-4	10.38	11.568	1.188
040843	P13-5	10.38	18.711	8.331
040843	P13-6	10.38	14.070	3.690
040843	P13-7	10.38	22.128	11.748
040843	P13-8	10.38	11.746	1.366
040843	P15-1	10.38	16.763	6.383
040843	P15-2	10.38	15.828	5.448
040843	P15-3	10.38	13.768	3.388
040843	P15-4	10.38	12.955	2.575
040843	P15-5	10.38	14.650	4.270
040843	P15-6	10.38	16.374	5.994
040843	P15-7	10.38	17.223	6.843
040843	P15-8	10.38	16.470	6.090
040843	P16-1	10.38	15.292	4.912
040843	P16-2	10.38	35.914	25.534
040843	P16-3	10.38	33.345	22.965
040843	P16-4	10.38	17.447	7.067
040843	P16-5	10.38	30.326	19.946
040843	P16-6	10.38	35.757	25.377
040843	P16-7	10.38	22.606	12.226
040843	P16-8	10.38	37.338	26.958

040843	P17-1	10.38	15.226	4.846
040843	P17-2	10.38	11.867	1.427
040843	P17-3	10.38	13.854	3.474
040843	P17-4	10.38	15.981	5.601
040843	P17-5	10.38	14.260	3.880
040843	P17-6	10.38	35.025	24.645
040843	P17-7	10.38	22.751	12.371
040843	P17-8	10.38	53.706	43.326
040843	P18-1	10.38	13.719	3.339
040843	P18-2	10.38	11.759	1.379
040843	P18-3	10.38	14.811	4.431
040843	P18-4	10.38	12.527	2.147
040843	P18-5	10.38	14.004	3.624
040843	P18-6	10.38	16.305	7.925
040843	P18-7	10.38	16.413	6.033
040843	P18-8	10.38	26.671	16.291
040843	P19-1	10.38	12.328	1.948
040843	P19-2	10.38	8.906	-1.474
040843	P19-3	10.38	11.005	.625
040843	P19-4	10.38	9.461	-.919
040843	P19-5	10.38	13.278	2.898
040843	P19-6	10.38	10.394	.014
040843	P19-7	10.38	11.241	.861
040843	P19-8	10.38	11.235	.855
040843	P20-1	10.38	14.329	3.949
040843	P20-2	10.38	14.099	3.719
040843	P20-3	10.38	10.292	-.088
040843	P20-4	10.38	11.313	.933
040843	P20-5	10.38	13.818	3.438
040843	P20-6	10.38	13.237	2.857
040843	P20-7	10.38	12.914	2.534
040843	P20-8	10.38	13.486	3.106
040843	P21-1	10.38	10.128	-.252
040843	P21-2	10.38	10.172	-.208
040843	P21-3	10.38	12.449	2.069
040843	P21-4	10.38	9.824	-.556
040843	P21-5	10.38	13.102	2.722
040843	P21-6	10.38	11.620	1.240
040843	P21-7	10.38	18.203	7.823
040843	P21-8	10.38	10.508	.128
040843	P24-1	10.38	56.267	45.887
040843	P24-2	10.38	131.772	121.392
040843	P24-3	10.38	42.601	32.221
040843	P24-4	10.38	39.545	29.165
040843	P24-5	10.38	65.212	54.832
040843	P24-6	10.38	33.620	23.240
040843	P24-7	10.38	33.043	22.683
040843	P24-8	10.38	27.229	16.849

TEST CONDITIONS: FLOW:4.306PM INJ:0.096PM 4% NANOS TO P43 CASE 4

TEST ID PIN-SENSOR

	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
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040844	P22-1	10.38	8.105	-2.275
040844	P22-2	10.38	7.241	-3.139
040844	P22-3	10.38	10.045	-.295
040844	P22-4	10.38	10.549	.209
040844	P22-5	10.38	12.950	2.570
040844	P22-6	10.38	12.540	2.200
040844	P22-7	10.38	21.823	11.443
040844	P22-8	10.38	20.618	10.238
040844	P23-1	10.38	67.500	57.120
040844	P23-2	10.38	83.545	73.165
040844	P23-3	10.38	29.621	19.241
040844	P23-4	10.38	30.548	20.168
040844	P23-5	10.38	84.513	74.133
040844	P23-6	10.38	49.415	39.035
040844	P23-7	10.38	75.751	65.371
040844	P23-8	10.38	61.640	51.300
040844	P25-1	10.38	147.770	137.390
040844	P25-2	10.38	644.517	634.137
040844	P25-3	10.38	788.296	777.916
040844	P25-4	10.38	141.247	130.867
040844	P25-5	10.38	305.418	295.038
040844	P25-6	10.38	280.955	270.575
040844	P25-7	10.38	270.315	259.935
040844	P25-8	10.38	159.032	188.652
040844	P26-1	10.38	27.250	16.870
040844	P26-2	10.38	47.543	37.163
040844	P26-3	10.38	29.026	18.646
040844	P26-4	10.38	70.939	60.559
040844	P26-5	10.38	54.840	44.460
040844	P26-6	10.38	115.010	104.630
040844	P26-7	10.38	73.768	63.388
040844	P26-8	10.38	100.996	90.616
040844	P27-1	10.38	19.684	9.304
040844	P27-2	10.38	15.144	4.808
040844	P27-3	10.38	23.243	12.863
040844	P27-4	10.38	40.198	29.818
040844	P27-5	10.38	30.547	20.167
040844	P27-6	10.38	65.323	54.943
040844	P27-7	10.38	59.724	49.344
040844	P27-8	10.38	81.612	71.232

040844	P28-1	10.38	7.733	-2.647
040844	P28-2	10.38	6.075	-3.705
040844	P28-3	10.38	9.096	-.684
040844	P28-4	10.38	10.316	-.064
040844	P28-5	10.38	10.973	.593
040844	P28-6	10.38	13.514	3.134
040844	P28-7	10.38	14.237	3.857
040844	P28-8	10.38	19.563	9.183
040844	P29-1	10.38	10.058	-.322
040844	P29-2	10.38	15.120	2.740
040844	P29-3	10.38	10.372	-.008
040844	P29-4	10.38	11.819	1.439
040844	P29-5	10.38	12.299	1.919
040844	P29-6	10.38	9.497	-.883
040844	P29-7	10.38	12.019	2.239
040844	P29-8	10.38	11.207	.827
040844	P30-1	10.38	11.599	1.019
040844	P30-2	10.38	9.133	-1.247
040844	P30-3	10.38	8.403	-1.977
040844	P30-4	10.38	8.312	-2.064
040844	P30-5	10.38	7.723	-2.657
040844	P30-6	10.38	8.652	-1.728
040844	P30-7	10.38	9.748	-.592
040844	P30-8	10.38	9.253	-1.127
040844	P31-1	10.38	9.415	-.965
040844	P31-2	10.38	3.937	-1.443
040844	P31-3	10.38	10.312	-.068
040844	P31-4	10.38	8.438	-1.942
040844	P31-5	10.38	10.187	-.193
040844	P31-6	10.38	9.168	-1.212
040844	P31-7	10.38	11.049	1.469
040844	P31-8	10.38	10.357	-.023
040844	P24-1	10.38	39.425	29.045
040844	P24-2	10.38	126.623	116.243
040844	P24-3	10.38	34.427	24.047
040844	P24-4	10.38	33.276	22.896
040844	P24-5	10.38	37.638	27.258
040844	P24-6	10.38	30.620	20.240
040844	P24-7	10.38	31.840	21.460
040844	P24-8	10.38	25.033	14.653

72. 1EF C

73. SELECT CAC44

PARAMETRIC TABLE CAC244 LOADED.

74. HEAD BUL DATA ON E

A-26

TEST CONDITIONS: FLOW:430PPM INV:0.096PM 4% NANOS TO P43 CASE 4

TEST ID	PIN-SENSUR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040845	P32-1	10.38	10.657	.477
040845	P32-2	10.38	12.846	2.506
040845	P32-3	10.38	13.746	3.406
040845	P32-4	10.38	12.815	2.435
040845	P32-5	10.38	20.292	9.912
040845	P32-6	10.38	17.050	6.670
040845	P32-7	10.38	21.401	11.021
040845	P32-8	10.38	25.725	15.345
040845	P33-1	10.38	24.944	14.604
040845	P33-2	10.38	37.244	26.904
040845	P33-3	10.38	39.834	29.474
040845	P33-4	10.38	26.965	16.585
040845	P33-5	10.38	53.844	43.504
040845	P33-6	10.38	55.363	44.983
040845	P33-7	10.38	79.656	69.276
040845	P33-8	10.38	67.031	56.651
040845	P34-1	10.38	2691.512	2881.132
040845	P34-2	10.38	488.557	478.177
040845	P34-3	10.38	142.202	131.822
040845	P34-4	10.38	796.067	785.687
040845	P34-5	10.38	418.703	208.323
040845	P34-6	10.38	192.069	181.689
040845	P34-7	10.38	356.020	345.640
040845	P34-8	10.38	120.993	110.613
040845	P35-1	10.38	42.924	32.544
040845	P35-2	10.38	608.392	798.012
040845	P35-3	10.38	629.165	618.785
040845	P35-4	10.38	429.142	218.762
040845	P35-5	10.38	200.608	190.228
040845	P35-6	10.38	346.552	336.172
040845	P35-7	10.38	327.594	317.214
040845	P35-8	10.38	231.731	221.351
040845	P36-1	10.38	500.347	489.967
040845	P36-2	10.38	458.274	247.894
040845	P36-3	10.38	283.076	272.696
040845	P36-4	10.38	621.742	611.362
040845	P36-5	10.38	320.513	310.133
040845	P36-6	10.38	343.713	333.333
040845	P36-7	10.38	240.954	230.574
040845	P36-8	10.38	498.564	288.188

040845	P37-1	10.38	26.641	15.701
040845	P37-2	10.38	19.928	9.548
040845	P37-3	10.38	97.517	87.137
040845	P37-4	10.38	122.030	111.650
040845	P37-5	10.38	409.391	199.011
040845	P37-6	10.38	181.038	170.658
040845	P37-7	10.38	181.346	170.966
040845	P37-8	10.38	194.927	184.547
040845	P38-1	10.38	14.934	4.534
040845	P38-2	10.38	16.765	6.385
040845	P38-3	10.38	13.248	2.878
040845	P38-4	10.38	23.155	12.775
040845	P38-5	10.38	16.448	6.108
040845	P38-6	10.38	37.860	27.480
040845	P38-7	10.38	47.731	37.351
040845	P38-8	10.38	90.990	80.610
040845	P40-1	10.38	7.398	-2.982
040845	P40-2	10.38	4.132	-6.248
040845	P40-3	10.38	2.741	-7.639
040845	P40-4	10.38	3.400	-6.980
040845	P40-5	10.38	5.670	-4.710
040845	P40-6	10.38	16.008	5.628
040845	P40-7	10.38	6.538	-3.842
040845	P41-1	10.38	16.473	6.093
040845	P41-2	10.38	13.586	3.206
040845	P41-3	10.38	18.060	7.680
040845	P41-4	10.38	18.456	8.076
040845	P41-5	10.38	26.113	15.733
040845	P41-6	10.38	22.594	12.214
040845	P41-7	10.38	41.792	31.412
040845	P41-8	10.38	56.196	45.816
040845	P42-1	10.38	38.259	27.879
040845	P42-2	10.38	46.563	36.183
040845	P42-3	10.38	60.112	49.732
040845	P42-4	10.38	69.928	59.548
040845	P42-5	10.38	250.346	279.966
040845	P42-6	10.38	239.624	229.244
040845	P42-7	10.38	129.440	119.080
040845	P42-8	10.38	162.402	152.022
040845	P24-1	10.38	50.805	40.425
040845	P24-2	10.38	97.741	87.361
040845	P24-3	10.38	35.991	25.611
040845	P24-4	10.38	28.676	18.296
040845	P24-5	10.38	51.242	40.902
040845	P24-6	10.38	29.343	19.003
040845	P24-7	10.38	29.554	19.174
040845	P24-8	10.38	23.544	13.164

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040840	P44-1	10.38	91.351	80.971
040840	P44-2	10.38	124.441	114.101
040840	P44-3	10.38	219.417	209.037
040840	P44-4	10.38	537.185	526.805
040840	P44-5	10.38	621.397	611.017
040840	P44-6	10.38	265.479	255.099
040840	P44-7	10.38	292.485	282.105
040840	P44-8	10.38	274.572	264.192
040840	P45-1	10.38	66.937	56.557
040840	P45-2	10.38	43.255	32.875
040840	P45-3	10.38	274.210	263.830
040840	P45-4	10.38	224.120	213.740
040840	P45-5	10.38	254.661	244.281
040840	P45-6	10.38	181.357	170.977
040840	P45-7	10.38	231.021	220.641
040840	P45-8	10.38	184.180	173.800
040840	P46-1	10.38	28.420	18.040
040840	P46-2	10.38	25.127	14.747
040840	P46-3	10.38	16.700	6.320
040840	P46-4	10.38	22.091	11.711
040840	P46-5	10.38	27.493	17.113
040840	P46-6	10.38	35.099	24.719
040840	P46-7	10.38	73.599	63.219
040840	P46-8	10.38	35.461	25.081
040840	P47-1	10.38	10.436	.056
040840	P47-2	10.38	11.361	.981
040840	P47-3	10.38	10.008	-.372
040840	P47-4	10.38	10.923	.543
040840	P47-5	10.38	13.808	3.428
040840	P47-6	10.38	12.751	2.371
040840	P47-7	10.38	23.471	13.091
040840	P47-8	10.38	17.065	6.685
040840	P48-1	10.38	20.281	9.901
040840	P48-2	10.38	20.521	10.141
040840	P48-3	10.38	22.434	12.054
040840	P48-4	10.38	21.993	11.613
040840	P48-5	10.38	26.205	15.825
040840	P48-6	10.38	26.289	17.909
040840	P48-7	10.38	48.739	38.359
040840	P48-8	10.38	87.223	76.843
040840	P49-1	10.38	42.572	32.192
040840	P49-2	10.38	55.323	44.943
040840	P49-3	10.38	117.268	106.888
040840	P49-4	10.38	221.342	211.002
040840	P49-5	10.38	93.358	82.978
040840	P49-6	10.38	119.152	108.772
040840	P49-7	10.38	122.556	112.176
040840	P49-8	10.38	148.524	138.144
040840	P50-1	10.38	55.214	44.834
040840	P50-2	10.38	67.758	57.378
040840	P50-3	10.38	189.243	178.863
040840	P50-4	10.38	152.191	141.811
040840	P50-5	10.38	238.422	228.042
040840	P50-6	10.38	162.209	151.829
040840	P50-7	10.38	228.857	218.477
040840	P50-8	10.38	125.503	115.123
040840	P51-1	10.38	41.088	30.708
040840	P51-2	10.38	42.065	31.685
040840	P51-3	10.38	110.943	100.563
040840	P51-4	10.38	55.646	45.266
040840	P51-5	10.38	178.105	167.725
040840	P51-6	10.38	128.415	118.035
040840	P51-7	10.38	176.712	166.332
040840	P51-8	10.38	168.542	158.162
040840	P52-1	10.38	16.852	6.472
040840	P52-2	10.38	22.874	12.494
040840	P52-3	10.38	14.956	4.576
040840	P52-4	10.38	18.380	8.000
040840	P52-5	10.38	26.979	16.599
040840	P52-6	10.38	42.259	31.879
040840	P52-7	10.38	64.541	58.201
040840	P52-8	10.38	76.929	66.549
040840	P53-1	10.38	10.820	.440
040840	P53-2	10.38	10.417	.037
040840	P53-3	10.38	10.648	.268
040840	P53-4	10.38	9.473	-.907
040840	P53-5	10.38	12.677	2.297
040840	P53-6	10.38	11.408	1.028
040840	P53-7	10.38	16.291	5.911
040840	P53-8	10.38	14.126	3.746
040840	P24-1	10.38	53.577	43.197
040840	P24-2	10.38	143.164	132.804
040840	P24-3	10.38	41.631	31.251
040840	P24-4	10.38	38.353	27.973
040840	P24-5	10.38	60.818	50.438
040840	P24-6	10.38	32.509	22.129
040840	P24-7	10.38	32.880	22.420
040840	P24-8	10.3	24.724	14.344

TEST CONDITIONS: FLOW:430GPM INJ:0.09GPM 4% NAN03 TO P43 CASE 4

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040847	P54-1	10.38	10.711	.331
040847	P54-2	10.38	11.601	1.221
040847	P54-3	10.38	12.812	2.432
040847	P54-4	10.38	16.460	6.080
040847	P54-5	10.38	16.211	5.831
040847	P54-6	10.38	17.204	6.824
040847	P54-7	10.38	32.524	22.144
040847	P54-8	10.38	37.281	26.901
040847	P55-1	10.38	17.527	7.147
040847	P55-2	10.38	19.190	8.810
040847	P55-3	10.38	25.556	15.176
040847	P55-4	10.38	20.035	9.655
040847	P55-5	10.38	55.366	44.988
040847	P55-6	10.38	44.078	33.698
040847	P55-7	10.38	73.654	63.274
040847	P55-8	10.38	55.034	44.654
040847	P56-1	10.38	25.519	15.139
040847	P56-2	10.38	22.756	12.376
040847	P56-3	10.38	27.694	17.314
040847	P56-4	10.38	19.778	9.398
040847	P56-5	10.38	102.830	92.450
040847	P56-6	10.38	64.843	54.463
040847	P56-7	10.38	158.642	148.262
040847	P56-8	10.38	29.079	18.699
040847	P57-1	10.38	9.709	.671
040847	P57-2	10.38	12.980	2.600
040847	P57-3	10.38	12.599	2.219
040847	P57-4	10.38	15.947	5.607
040847	P57-5	10.38	20.594	10.214
040847	P57-6	10.38	25.720	15.340
040847	P57-7	10.38	54.249	43.869
040847	P57-8	10.38	47.190	36.810
040847	P58-1	10.38	8.399	-1.981
040847	P58-2	10.38	10.511	.131
040847	P58-3	10.38	9.913	-.467
040847	P58-4	10.38	11.844	1.464
040847	P58-5	10.38	9.557	-.823
040847	P58-6	10.38	10.661	.281
040847	P58-7	10.38	7.345	-2.995
040847	P58-8	10.38	12.503	2.123

040847	P59-1	10.38	14.128	3.748
040847	P59-2	10.38	9.433	-.947
040847	P59-3	10.38	14.934	4.554
040847	P59-4	10.38	14.995	4.615
040847	P59-5	10.38	12.498	2.118
040847	P59-6	10.38	12.562	2.182
040847	P59-7	10.38	20.700	10.320
040847	P59-8	10.38	19.539	9.159
040847	P60-1	10.38	9.813	-.567
040847	P60-2	10.38	8.990	-1.390
040847	P60-3	10.38	11.660	1.280
040847	P60-4	10.38	12.273	1.893
040847	P60-5	10.38	12.363	1.983
040847	P60-6	10.38	12.846	2.466
040847	P60-7	10.38	18.856	8.476
040847	P60-8	10.38	10.165	5.785
040847	P61-1	10.38	10.758	.378
040847	P61-2	10.38	10.713	.333
040847	P61-3	10.38	11.048	.668
040847	P61-4	10.38	12.854	2.474
040847	P61-5	10.38	12.807	2.427
040847	P61-6	10.38	13.526	3.146
040847	P61-7	10.38	19.418	9.438
040847	P61-8	10.38	23.211	12.831
040847	P24-1	10.38	57.676	47.296
040847	P24-2	10.38	412.406	102.026
040847	P24-3	10.38	41.328	30.948
040847	P24-4	10.38	34.482	24.102
040847	P24-5	10.38	61.746	51.366
040847	P24-6	10.38	30.217	19.837
040847	P24-7	10.38	30.925	20.545
040847	P24-8	10.38	23.726	13.346

d1. TEF D
d2. SELECT CA021

PARAMETER TABLE CA021 LOADED.

d3. REMO BCD DATA ON E

TEST CONDITIONS: FLOW:430GPM INJ:0.09GPM 4X NAN3 TO P39 CASE 5

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040848	P1-1	10.40	28.146	17.746
040848	P1-2	10.40	27.628	17.228
040848	P1-3	10.40	42.058	31.658
040848	P1-4	10.40	30.685	20.285
040848	P1-5	10.40	50.350	39.950
040848	P1-6	10.40	55.283	44.883
040848	P1-7	10.40	82.513	72.113
040848	P1-8	10.40	71.737	61.337
040848	P2-1	10.40	23.079	12.679
040848	P2-2	10.40	16.295	5.895
040848	P2-3	10.40	17.127	6.727
040848	P2-4	10.40	25.280	14.880
040848	P2-5	10.40	22.740	12.380
040848	P2-6	10.40	20.102	9.702
040848	P2-7	10.40	51.958	41.558
040848	P2-8	10.40	62.962	52.562
040848	P3-1	10.40	18.542	8.142
040848	P3-2	10.40	23.912	13.512
040848	P3-3	10.40	19.146	8.746
040848	P3-4	10.40	22.456	12.056
040848	P3-5	10.40	21.844	11.444
040848	P3-6	10.40	17.754	7.354
040848	P3-7	10.40	38.634	28.234
040848	P3-8	10.40	31.849	21.449
040848	P4-1	10.40	2.903	-7.497
040848	P4-2	10.40	19.403	9.003
040848	P4-3	10.40	36.858	26.458
040848	P4-4	10.40	14.919	4.519
040848	P4-5	10.40	18.598	8.198
040848	P4-6	10.40	20.091	9.691
040848	P4-7	10.40	21.139	10.739
040848	P4-8	10.40	20.990	10.590
040848	P5-1	10.40	7.905	-2.495
040848	P5-2	10.40	12.066	1.696
040848	P5-3	10.40	11.643	1.243
040848	P5-4	10.40	11.643	1.243
040848	P5-5	10.40	23.795	13.395
040848	P5-6	10.40	13.797	3.397
040848	P5-7	10.40	9.681	-7.719
040848	P5-8	10.40	22.437	12.037
040848	P6-1	10.40	19.895	9.495
040848	P6-2	10.40	22.744	12.384
040848	P6-3	10.40	17.944	7.584
040848	P6-4	10.40	14.410	8.010
040848	P6-5	10.40	22.274	11.874
040848	P6-6	10.40	20.518	10.118
040848	P6-7	10.40	24.980	14.580
040848	P6-8	10.40	3.328	-7.072
040848	P7-1	10.40	12.813	2.413
040848	P7-2	10.40	31.904	21.504
040848	P7-3	10.40	16.776	6.376
040848	P7-4	10.40	11.931	1.531
040848	P7-5	10.40	14.340	3.980
040848	P7-6	10.40	9.624	-7.776
040848	P7-7	10.40	14.171	7.771
040848	P7-8	10.40	20.224	9.824
040848	P8-1	10.40	18.475	8.075
040848	P8-2	10.40	14.568	4.168
040848	P8-3	10.40	20.923	10.523
040848	P8-4	10.40	18.340	5.990
040848	P8-5	10.40	18.483	8.083
040848	P8-6	10.40	16.192	5.792
040848	P8-7	10.40	14.797	4.397
040848	P8-8	10.40	13.485	3.085
040848	P9-1	10.40	9.075	-1.325
040848	P9-2	10.40	3.618	-6.782
040848	P9-3	10.40	19.220	6.820
040848	P9-4	10.40	19.065	8.665
040848	P9-5	10.40	13.352	2.952
040848	P9-6	10.40	13.345	2.945
040848	P9-7	10.40	11.246	.846
040848	P9-8	10.40	11.246	.846
040848	P10-1	10.40	30.317	19.917
040848	P10-2	10.40	8.502	-1.894
040848	P10-3	10.40	104.885	94.485
040848	P10-4	10.40	50.107	39.707
040848	P10-5	10.40	87.255	76.855
040848	P10-6	10.40	60.084	50.204
040848	P10-7	10.40	102.083	91.683
040848	P10-8	10.40	58.859	48.459
040848	P24-1	10.40	7.110	-3.290
040848	P24-2	10.40	5.314	-5.086
040848	P24-3	10.40	13.005	2.605
040848	P24-4	10.40	6.442	-1.958
040848	P24-5	10.40	7.531	-2.869
040848	P24-6	10.40	6.960	-3.440
040848	P24-7	10.40	7.548	-2.842
040848	P24-8	10.40	8.343	-2.057

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040849	P11-1	10.40	285.694	275.294
040849	P11-2	10.40	46.647	36.247
040849	P11-3	10.40	91.391	80.991
040849	P11-4	10.40	34.597	24.197
040849	P11-5	10.40	145.148	134.748
040849	P11-6	10.40	101.931	91.531
040849	P11-7	10.40	113.766	103.366
040849	P11-8	10.40	87.382	76.982
040849	P12-1	10.40	15.248	4.848
040849	P12-2	10.40	19.038	8.638
040849	P12-3	10.40	15.935	5.535
040849	P12-4	10.40	15.052	4.652
040849	P12-5	10.40	68.507	58.107
040849	P12-6	10.40	43.385	37.965
040849	P12-7	10.40	57.818	47.418
040849	P12-8	10.40	53.290	42.890
040849	P13-1	10.40	12.344	1.944
040849	P13-2	10.40	12.234	1.834
040849	P13-3	10.40	11.256	.856
040849	P13-4	10.40	10.656	.256
040849	P13-5	10.40	14.633	4.233
040849	P13-6	10.40	14.573	4.173
040849	P13-7	10.40	23.050	12.650
040849	P13-8	10.40	12.744	2.344
040849	P15-1	10.40	8.674	-1.726
040849	P15-2	10.40	9.671	-.729
040849	P15-3	10.40	9.447	-.953
040849	P15-4	10.40	8.407	-1.993
040849	P15-5	10.40	9.883	-.517
040849	P15-6	10.40	10.206	-.194
040849	P15-7	10.40	10.618	.218
040849	P15-8	10.40	9.335	-1.065
040849	P16-1	10.40	9.437	-.963
040849	P16-2	10.40	17.893	7.493
040849	P16-3	10.40	25.512	15.112
040849	P16-4	10.40	8.250	-2.150
040849	P16-5	10.40	19.536	9.136
040849	P16-6	10.40	13.042	2.642
040849	P16-7	10.40	12.568	2.168
040849	P16-8	10.40	9.790	-.610
040849	P17-1	10.40	8.110	-2.290
040849	P17-2	10.40	9.334	-1.066
040849	P17-3	10.40	8.910	-1.490
040849	P17-4	10.40	7.514	-2.886
040849	P17-5	10.40	8.009	-2.391
040849	P17-6	10.40	8.528	-1.872
040849	P17-7	10.40	10.008	-.392
040849	P17-8	10.40	8.892	-1.508
040849	P18-1	10.40	11.177	.777
040849	P18-2	10.40	10.068	-.332
040849	P18-3	10.40	12.463	2.063
040849	P18-4	10.40	8.954	-1.446
040849	P18-5	10.40	12.006	1.606
040849	P18-6	10.40	10.060	.260
040849	P18-7	10.40	11.044	1.294
040849	P18-8	10.40	10.917	.517
040849	P19-1	10.40	10.015	.215
040849	P19-2	10.40	8.591	-1.809
040849	P19-3	10.40	10.635	.235
040849	P19-4	10.40	9.594	-.806
040849	P19-5	10.40	12.351	1.951
040849	P19-6	10.40	9.758	-.642
040849	P19-7	10.40	10.480	.080
040849	P19-8	10.40	10.016	-.384
040849	P20-1	10.40	258.383	247.983
040849	P20-2	10.40	312.034	301.634
040849	P20-3	10.40	345.908	335.508
040849	P20-4	10.40	344.782	334.382
040849	P20-5	10.40	247.768	237.368
040849	P20-6	10.40	254.183	243.783
040849	P20-7	10.40	207.610	197.210
040849	P20-8	10.40	203.738	193.338
040849	P21-1	10.40	56.296	45.896
040849	P21-2	10.40	101.726	91.326
040849	P21-3	10.40	171.220	160.820
040849	P21-4	10.40	170.476	160.076
040849	P21-5	10.40	194.359	183.959
040849	P21-6	10.40	186.686	176.286
040849	P21-7	10.40	149.907	139.507
040849	P21-8	10.40	142.200	131.800
040849	P24-1	10.40	7.904	-2.496
040849	P24-2	10.40	5.318	-5.082
040849	P24-3	10.40	7.516	-2.884
040849	P24-4	10.40	5.725	-4.675
040849	P24-5	10.40	6.822	-3.578
040849	P24-6	10.40	7.203	-3.197
040849	P24-7	10.40	9.470	-.930
040849	P24-8	10.40	9.280	-1.120

TEST CONDITIONS: FLOW:430GPM INJ:0.196PM 4% RAN03 TO P39 CASE 5

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040850	P22-1	10.40	14.377	3.977
040850	P22-2	10.40	14.039	3.639
040850	P22-3	10.40	17.520	7.120
040850	P22-4	10.40	23.163	12.763
040850	P22-5	10.40	51.368	40.968
040850	P22-6	10.40	66.043	55.643
040850	P22-7	10.40	55.067	44.667
040850	P22-8	10.40	69.612	59.212
040850	P23-1	10.40	9.613	-.767
040850	P23-2	10.40	10.848	-.448
040850	P23-3	10.40	9.809	-.591
040850	P23-4	10.40	11.037	-.637
040850	P23-5	10.40	10.163	-.237
040850	P23-6	10.40	8.888	-1.512
040850	P23-7	10.40	12.602	2.202
040850	P23-8	10.40	12.551	2.151
040850	P25-1	10.40	7.520	-2.880
040850	P25-2	10.40	8.138	-2.262
040850	P25-3	10.40	6.896	-3.504
040850	P25-4	10.40	8.291	-2.109
040850	P25-5	10.40	7.379	-3.021
040850	P25-6	10.40	7.847	-2.553
040850	P25-7	10.40	7.335	-3.065
040850	P25-8	10.40	7.536	-2.864
040850	P26-1	10.40	8.772	-1.628
040850	P26-2	10.40	8.045	-2.355
040850	P26-3	10.40	7.319	-3.081
040850	P26-4	10.40	7.485	-2.915
040850	P26-5	10.40	9.371	-1.029
040850	P26-6	10.40	9.391	-1.009
040850	P26-7	10.40	10.023	-.377
040850	P26-8	10.40	10.202	-.198
040850	P27-1	10.40	8.110	-2.290
040850	P27-2	10.40	8.945	-1.495
040850	P27-3	10.40	10.876	-.476
040850	P27-4	10.40	10.034	-.366
040850	P27-5	10.40	9.199	-1.201
040850	P27-6	10.40	9.992	-.408
040850	P27-7	10.40	10.912	-.502
040850	P27-8	10.40	8.886	-1.514
040850	P28-1	10.40	7.337	-3.063
040850	P28-2	10.40	7.332	-3.068
040850	P28-3	10.40	9.376	-1.024
040850	P28-4	10.40	10.642	-.242
040850	P28-5	10.40	9.450	-.950
040850	P28-6	10.40	10.920	-.520
040850	P28-7	10.40	9.852	-.548
040850	P28-8	10.40	9.353	-1.047
040850	P29-1	10.40	10.245	-.115
040850	P29-2	10.40	12.137	1.737
040850	P29-3	10.40	11.415	1.015
040850	P29-4	10.40	11.453	1.053
040850	P29-5	10.40	11.518	1.118
040850	P29-6	10.40	8.812	-1.588
040850	P29-7	10.40	11.477	1.077
040850	P29-8	10.40	9.876	-.524
040850	P30-1	10.40	1848.439	1878.039
040850	P30-2	10.40	142.202	131.802
040850	P30-3	10.40	213.846	203.446
040850	P30-4	10.40	298.208	287.808
040850	P30-5	10.40	247.127	236.727
040850	P30-6	10.40	204.320	193.920
040850	P30-7	10.40	269.710	259.310
040850	P30-8	10.40	194.058	183.658
040850	P31-1	10.40	399.040	388.640
040850	P31-2	10.40	190.360	179.960
040850	P31-3	10.40	284.734	274.334
040850	P31-4	10.40	249.789	239.389
040850	P31-5	10.40	248.091	237.691
040850	P31-6	10.40	289.390	278.990
040850	P31-7	10.40	158.570	148.170
040850	P31-8	10.40	218.446	208.046
040850	P24-1	10.40	7.316	-3.084
040850	P24-2	10.40	4.351	-6.049
040850	P24-3	10.40	6.443	-3.957
040850	P24-4	10.40	5.152	-5.248
040850	P24-5	10.40	7.345	-3.015
040850	P24-6	10.40	7.204	-3.106
040850	P24-7	10.40	9.369	-1.031
040850	P24-8	10.40	8.003	-2.397

90. IEF 0

91. SELECT CAD24

PARAMETER TABLE CAD24 LOADED.

92. READ BLD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040851	P32-1	10.40	39.287	28.887
040851	P32-2	10.40	30.972	20.572
040851	P32-3	10.40	49.119	38.719
040851	P32-4	10.40	48.345	37.945
040851	P32-5	10.40	118.984	108.584
040851	P32-6	10.40	120.002	109.602
040851	P32-7	10.40	92.336	81.936
040851	P32-8	10.40	134.579	124.179
040851	P33-1	10.40	16.209	5.809
040851	P33-2	10.40	15.925	5.525
040851	P33-3	10.40	13.511	3.111
040851	P33-4	10.40	18.431	8.031
040851	P33-5	10.40	20.192	9.792
040851	P33-6	10.40	19.648	9.248
040851	P33-7	10.40	33.077	22.677
040851	P33-8	10.40	37.169	26.769
040851	P34-1	10.40	11.173	.773
040851	P34-2	10.40	10.049	-.351
040851	P34-3	10.40	8.740	-1.660
040851	P34-4	10.40	9.841	-.559
040851	P34-5	10.40	9.035	-1.365
040851	P34-6	10.40	10.755	.355
040851	P34-7	10.40	10.708	.308
040851	P34-8	10.40	9.355	-1.045
040851	P35-1	10.40	9.954	-.446
040851	P35-2	10.40	9.727	-.673
040851	P35-3	10.40	8.882	-1.518
040851	P35-4	10.40	8.832	-1.568
040851	P35-5	10.40	10.201	-.199
040851	P35-6	10.40	9.052	-1.348
040851	P35-7	10.40	9.215	-1.185
040851	P35-8	10.40	9.559	-.841
040851	P36-1	10.40	10.803	.403
040851	P36-2	10.40	9.500	-.900
040851	P36-3	10.40	9.245	-1.155
040851	P36-4	10.40	9.492	-.908
040851	P36-5	10.40	10.222	-.178
040851	P36-6	10.40	8.577	-1.823
040851	P36-7	10.40	10.881	.481
040851	P36-8	10.40	9.581	-.819
040851	P37-1	10.40	6.822	-3.578
040851	P37-2	10.40	8.178	-2.222
040851	P37-3	10.40	8.846	-1.554
040851	P37-4	10.40	5.469	-4.931
040851	P37-5	10.40	8.734	-1.666
040851	P37-6	10.40	10.013	-.387
040851	P37-7	10.40	10.962	.562
040851	P37-8	10.40	11.580	1.150
040851	P38-1	10.40	11.539	1.139
040851	P38-2	10.40	11.025	.625
040851	P38-3	10.40	10.851	.451
040851	P38-4	10.40	10.991	.591
040851	P38-5	10.40	10.602	.202
040851	P38-6	10.40	10.664	.264
040851	P38-7	10.40	10.542	.142
040851	P38-8	10.40	10.608	.208
040851	P40-1	10.40	26.423	16.063
040851	P40-2	10.40	31.406	21.006
040851	P40-3	10.40	101.442	91.092
040851	P40-4	10.40	34.864	24.464
040851	P40-5	10.40	138.827	128.427
040851	P40-6	10.40	63.793	58.393
040851	P40-7	10.40	88.875	78.475
040851	P40-8	10.40	126.229	115.869
040851	P41-1	10.40	14.565	4.165
040851	P41-2	10.40	13.310	2.930
040851	P41-3	10.40	14.569	4.169
040851	P41-4	10.40	15.469	5.069
040851	P41-5	10.40	23.020	12.620
040851	P41-6	10.40	20.769	10.369
040851	P41-7	10.40	31.476	21.076
040851	P41-8	10.40	26.906	16.586
040851	P42-1	10.40	10.388	-.012
040851	P42-2	10.40	8.715	-1.685
040851	P42-3	10.40	9.472	-.928
040851	P42-4	10.40	10.906	.506
040851	P42-5	10.40	9.359	-1.041
040851	P42-6	10.40	9.136	-1.264
040851	P42-7	10.40	7.851	-2.549
040851	P42-8	10.40	11.052	.652
040851	P24-1	10.40	9.723	-.677
040851	P24-2	10.40	9.652	-.743
040851	P24-3	10.40	11.115	.715
040851	P24-4	10.40	12.154	1.754
040851	P24-5	10.40	9.987	-.453
040851	P24-6	10.40	9.757	-.643
040851	P24-7	10.40	10.825	.425
040851	P24-8	10.40	11.427	1.027

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040852	P44-1	10.40	78.416	68.016
040852	P44-2	10.40	15.981	5.581
040852	P44-3	10.40	11.063	.663
040852	P44-4	10.40	9.599	-.801
040852	P44-5	10.40	12.295	1.895
040852	P44-6	10.40	10.980	.580
040852	P44-7	10.40	17.250	6.850
040852	P44-8	10.40	16.846	6.446
040852	P45-1	10.40	7.650	-2.750
040852	P45-2	10.40	8.318	-2.082
040852	P45-3	10.40	9.595	-.805
040852	P45-4	10.40	9.414	-.986
040852	P45-5	10.40	23.153	12.753
040852	P45-6	10.40	9.281	-1.119
040852	P45-7	10.40	8.528	-1.872
040852	P45-8	10.40	10.926	.526
040852	P46-1	10.40	9.171	-1.229
040852	P46-2	10.40	6.425	-3.975
040852	P46-3	10.40	7.838	-2.562
040852	P46-4	10.40	9.045	-1.355
040852	P46-5	10.40	8.508	-1.892
040852	P46-6	10.40	9.476	-.924
040852	P46-7	10.40	8.940	-1.460
040852	P46-8	10.40	10.184	-.216
040852	P47-1	10.40	12.019	1.619
040852	P47-2	10.40	10.904	.504
040852	P47-3	10.40	10.427	.027
040852	P47-4	10.40	10.967	.567
040852	P47-5	10.40	18.893	8.493
040852	P47-6	10.40	37.284	26.884
040852	P47-7	10.40	30.019	19.619
040852	P47-8	10.40	44.799	34.399
040852	P48-1	10.40	8.550	-1.850
040852	P48-2	10.40	6.830	-3.570
040852	P48-3	10.40	9.413	-.987
040852	P48-4	10.40	8.554	-1.846
040852	P48-5	10.40	9.053	-1.347
040852	P48-6	10.40	7.760	-2.640
040852	P48-7	10.40	9.675	-.725
040852	P48-8	10.40	10.038	-.362
040852	P49-1	10.40	7.422	-2.978
040852	P49-2	10.40	8.629	-1.771
040852	P49-3	10.40	7.549	-2.851
040852	P49-4	10.40	8.145	-2.255
040852	P49-5	10.40	7.737	-2.663
040852	P49-6	10.40	6.726	-3.674
040852	P49-7	10.40	7.872	-2.528
040852	P49-8	10.40	9.312	-1.088
040852	P50-1	10.40	7.795	-2.605
040852	P50-2	10.40	8.023	-2.377
040852	P50-3	10.40	9.544	-.856
040852	P50-4	10.40	8.525	-1.875
040852	P50-5	10.40	8.867	-1.533
040852	P50-6	10.40	8.978	-1.422
040852	P50-7	10.40	7.245	-3.155
040852	P50-8	10.40	8.573	-1.827
040852	P51-1	10.40	8.257	-2.143
040852	P51-2	10.40	9.464	-.936
040852	P51-3	10.40	8.312	-2.088
040852	P51-4	10.40	6.925	-3.475
040852	P51-5	10.40	8.879	-1.521
040852	P51-6	10.40	8.363	-2.017
040852	P51-7	10.40	9.041	-1.359
040852	P51-8	10.40	10.000	-.400
040852	P52-1	10.40	7.732	-2.668
040852	P52-2	10.40	7.040	-3.360
040852	P52-3	10.40	9.796	-.604
040852	P52-4	10.40	8.102	-2.298
040852	P52-5	10.40	8.951	-1.449
040852	P52-6	10.40	8.692	-1.708
040852	P52-7	10.40	7.354	-3.046
040852	P52-8	10.40	8.502	-1.898
040852	P53-1	10.40	8.500	-1.900
040852	P53-2	10.40	8.838	-1.562
040852	P53-3	10.40	8.771	-1.629
040852	P53-4	10.40	8.427	-1.973
040852	P53-5	10.40	9.356	-1.044
040852	P53-6	10.40	11.031	.631
040852	P53-7	10.40	10.854	.454
040852	P53-8	10.40	18.360	7.960
040852	P24-1	10.40	8.439	-1.961
040852	P24-2	10.40	6.126	-4.274
040852	P24-3	10.40	8.476	-1.924
040852	P24-4	10.40	7.639	-2.761
040852	P24-5	10.40	6.916	-3.484
040852	P24-6	10.40	6.076	-4.324
040852	P24-7	10.40	9.657	-1.743
040852	P24-8	10.40	9.232	-1.168

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040853	P54-1	10.40	10.954	.554
040853	P54-2	10.40	14.154	3.754
040853	P54-3	10.40	13.247	2.847
040853	P54-4	10.40	14.710	4.310
040853	P54-5	10.40	13.780	3.380
040853	P54-6	10.40	14.842	4.442
040853	P54-7	10.40	12.331	1.931
040853	P54-8	10.40	20.092	9.692
040853	P55-1	10.40	10.063	-.337
040853	P55-2	10.40	15.839	5.439
040853	P55-3	10.40	16.672	6.272
040853	P55-4	10.40	17.382	6.982
040853	P55-5	10.40	10.048	-.352
040853	P55-6	10.40	14.694	4.294
040853	P55-7	10.40	16.527	6.127
040853	P55-8	10.40	13.800	3.400
040853	P56-1	10.40	16.842	6.442
040853	P56-2	10.40	9.576	-.824
040853	P56-3	10.40	11.204	.804
040853	P56-4	10.40	13.709	3.309
040853	P56-5	10.40	10.669	.269
040853	P56-6	10.40	15.282	4.882
040853	P56-7	10.40	13.097	2.697
040853	P56-8	10.40	10.410	.010
040853	P57-1	10.40	11.645	1.245
040853	P57-2	10.40	12.687	2.287
040853	P57-3	10.40	12.261	1.861
040853	P57-4	10.40	12.120	1.720
040853	P57-5	10.40	13.570	3.170
040853	P57-6	10.40	13.240	2.840
040853	P57-7	10.40	17.869	7.469
040853	P57-8	10.40	11.198	.798
040853	P58-1	10.40	11.276	.876
040853	P58-2	10.40	13.329	2.929
040853	P58-3	10.40	12.364	1.964
040853	P58-4	10.40	14.617	4.217
040853	P58-5	10.40	11.551	1.151
040853	P58-6	10.40	11.842	1.442
040853	P58-7	10.40	9.134	-1.266
040853	P58-8	10.40	15.018	4.618
040853	P59-1	10.40	17.100	6.700
040853	P59-2	10.40	19.425	9.025
040853	P59-3	10.40	13.166	2.766
040853	P59-4	10.40	18.711	8.311
040853	P59-5	10.40	16.645	6.245
040853	P59-6	10.40	12.118	1.718
040853	P59-7	10.40	13.509	3.109
040853	P59-8	10.40	14.660	4.260
040853	P60-1	10.40	12.162	1.762
040853	P60-2	10.40	10.752	.352
040853	P60-3	10.40	13.980	3.580
040853	P60-4	10.40	14.871	4.471
040853	P60-5	10.40	13.808	3.408
040853	P60-6	10.40	15.046	4.646
040853	P60-7	10.40	11.168	.768
040853	P60-8	10.40	13.024	2.624
040853	P61-1	10.40	12.806	2.406
040853	P61-2	10.40	14.017	3.617
040853	P61-3	10.40	13.053	2.653
040853	P61-4	10.40	16.122	5.722
040853	P61-5	10.40	13.931	3.531
040853	P61-6	10.40	14.115	3.715
040853	P61-7	10.40	13.903	3.503
040853	P61-8	10.40	17.715	7.315
040853	P24-1	10.40	13.810	3.410
040853	P24-2	10.40	17.453	7.053
040853	P24-3	10.40	13.286	2.886
040853	P24-4	10.40	14.280	3.880
040853	P24-5	10.40	13.376	2.976
040853	P24-6	10.40	8.369	-2.031
040853	P24-7	10.40	13.044	2.644
040853	P24-8	10.40	13.478	3.078

15. TEF D

16. ENTER CAD21

PARAMETER TABLE CAD21 DATED 15 APR 71 ENTERED, LOC 1261960

17. SELECT CAD21

PARAMETER TABLE CAD21 LOADED.

18. READ BCD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040854	P1-1	10.48	15.261	4.781
040854	P1-2	10.48	11.891	1.411
040854	P1-3	10.48	26.365	15.915
040854	P1-4	10.48	16.461	5.981
040854	P1-5	10.48	12.646	2.166
040854	P1-6	10.48	15.553	5.073
040854	P1-7	10.48	18.402	7.922
040854	P1-8	10.48	10.370	-1.110
040854	P2-1	10.48	6.915	-3.565
040854	P2-2	10.48	8.758	-1.722
040854	P2-3	10.48	9.475	-1.005
040854	P2-4	10.48	12.078	1.598
040854	P2-5	10.48	12.078	1.598
040854	P2-6	10.48	10.971	.491
040854	P2-7	10.48	17.128	6.648
040854	P2-8	10.48	12.932	2.452
040854	P3-1	10.48	22.281	11.801
040854	P3-2	10.48	15.737	5.257
040854	P3-3	10.48	16.019	5.539
040854	P3-4	10.48	19.746	9.266
040854	P3-5	10.48	48.483	38.003
040854	P3-6	10.48	29.127	17.647
040854	P3-7	10.48	50.950	40.470
040854	P3-8	10.48	19.577	9.097
040854	P4-1	10.48	3573.178	3562.698
040854	P4-2	10.48	1174.767	1164.287
040854	P4-3	10.48	491.551	481.071
040854	P4-4	10.48	963.403	952.923
040854	P4-5	10.48	389.106	378.626
040854	P4-6	10.48	415.841	405.361
040854	P4-7	10.48	597.284	586.804
040854	P4-8	10.48	221.496	211.016
040854	P5-1	10.48	2297.812	2287.332
040854	P5-2	10.48	579.201	568.721
040854	P5-3	10.48	519.576	509.096
040854	P5-4	10.48	1024.945	1014.465
040854	P5-5	10.48	547.800	537.320
040854	P5-6	10.48	597.377	586.897
040854	P5-7	10.48	371.093	360.613
040854	P5-8	10.48	367.000	356.520
040854	P6-1	10.48	99.367	88.907
040854	P6-2	10.48	112.363	101.883
040854	P6-3	10.48	559.659	549.179
040854	P6-4	10.48	1193.960	1183.480
040854	P6-5	10.48	720.728	710.248
040854	P6-6	10.48	546.026	535.546
040854	P6-7	10.48	405.154	394.674
040854	P6-8	10.48	264.469	253.989
040854	P7-1	10.48	62.909	52.429
040854	P7-2	10.48	113.216	107.736
040854	P7-3	10.48	253.099	247.619
040854	P7-4	10.48	86.020	75.540
040854	P7-5	10.48	240.524	230.044
040854	P7-6	10.48	192.485	182.005
040854	P7-7	10.48	234.601	224.121
040854	P7-8	10.48	268.855	258.375
040854	P8-1	10.48	22.677	12.197
040854	P8-2	10.48	22.811	12.331
040854	P8-3	10.48	77.785	67.305
040854	P8-4	10.48	30.815	20.335
040854	P8-5	10.48	128.093	117.613
040854	P8-6	10.48	56.727	46.247
040854	P8-7	10.48	311.278	300.798
040854	P8-8	10.48	151.296	140.816
040854	P9-1	10.48	68.246	57.766
040854	P9-2	10.48	20.793	10.313
040854	P9-3	10.48	23.653	13.173
040854	P9-4	10.48	33.679	23.199
040854	P9-5	10.48	45.629	35.149
040854	P9-6	10.48	33.694	23.214
040854	P9-7	10.48	242.867	232.387
040854	P9-8	10.48	8.827	-1.653
040854	P10-1	10.48	5.948	-4.532
040854	P10-2	10.48	5.948	-4.532
040854	P10-3	10.48	5.948	-4.532
040854	P10-4	10.48	5.767	-4.713
040854	P10-5	10.48	8.049	-2.431
040854	P10-6	10.48	5.540	-4.940
040854	P10-7	10.48	15.444	4.964
040854	P10-8	10.48	6.414	-4.066
040854	P24-1	10.48	33.216	27.736
040854	P24-2	10.48	46.082	35.602
040854	P24-3	10.48	83.632	73.152
040854	P24-4	10.48	254.614	244.134
040854	P24-5	10.48	194.457	183.977
040854	P24-6	10.48	179.297	168.817
040854	P24-7	10.48	268.462	257.982
040854	P24-8	10.48	246.846	236.366

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040855	P11-1	10.48	8.260	-2.220
040855	P11-2	10.48	8.781	-1.699
040855	P11-3	10.48	9.074	-1.406
040855	P11-4	10.48	9.281	-1.199
040855	P11-5	10.48	12.906	2.426
040855	P11-6	10.48	11.238	.758
040855	P11-7	10.48	11.812	1.332
040855	P11-8	10.48	13.973	3.493
040855	P12-1	10.48	9.744	-.736
040855	P12-2	10.48	16.477	5.997
040855	P12-3	10.48	15.604	5.124
040855	P12-4	10.48	12.275	1.795
040855	P12-5	10.48	15.361	4.881
040855	P12-6	10.48	19.291	8.811
040855	P12-7	10.48	34.065	23.585
040855	P12-8	10.48	28.234	17.754
040855	P13-1	10.48	112.553	102.073
040855	P13-2	10.48	110.310	99.830
040855	P13-3	10.48	392.546	382.066
040855	P13-4	10.48	271.460	260.980
040855	P13-5	10.48	135.741	125.261
040855	P13-6	10.48	130.284	119.804
040855	P13-7	10.48	134.166	123.686
040855	P13-8	10.48	37.951	27.471
040855	P15-1	10.48	103.508	93.028
040855	P15-2	10.48	86.512	76.032
040855	P15-3	10.48	295.510	285.030
040855	P15-4	10.48	554.079	543.599
040855	P15-5	10.48	446.542	436.062
040855	P15-6	10.48	452.263	441.783
040855	P15-7	10.48	390.437	379.957
040855	P15-8	10.48	317.542	307.062
040855	P16-1	10.48	86.285	75.805
040855	P16-2	10.48	75.590	65.110
040855	P16-3	10.48	325.149	314.669
040855	P16-4	10.48	88.998	78.518
040855	P16-5	10.48	424.125	413.645
040855	P16-6	10.48	223.269	212.789
040855	P16-7	10.48	345.364	334.884
040855	P16-8	10.48	285.431	274.951
040855	P17-1	10.48	56.158	45.678
040855	P17-2	10.48	21.107	10.627
040855	P17-3	10.48	43.956	33.476
040855	P17-4	10.48	41.710	31.230
040855	P17-5	10.48	162.347	151.867
040855	P17-6	10.48	46.043	35.563
040855	P17-7	10.48	253.829	243.349
040855	P17-8	10.48	150.951	140.471
040855	P18-1	10.48	19.667	9.187
040855	P18-2	10.48	21.232	10.752
040855	P18-3	10.48	24.070	13.590
040855	P18-4	10.48	26.119	15.639
040855	P18-5	10.48	33.858	23.378
040855	P18-6	10.48	21.183	10.703
040855	P18-7	10.48	155.875	145.395
040855	P18-8	10.48	79.506	69.026
040855	P19-1	10.48	13.078	7.598
040855	P19-2	10.48	17.216	6.736
040855	P19-3	10.48	17.200	6.720
040855	P19-4	10.48	17.025	6.545
040855	P19-5	10.48	20.718	10.238
040855	P19-6	10.48	15.257	4.777
040855	P19-7	10.48	69.590	59.110
040855	P19-8	10.48	74.075	63.595
040855	P20-1	10.48	13.817	3.337
040855	P20-2	10.48	13.759	3.279
040855	P20-3	10.48	9.993	-.487
040855	P20-4	10.48	11.447	.967
040855	P20-5	10.48	14.523	4.043
040855	P20-6	10.48	13.007	2.527
040855	P20-7	10.48	11.053	.573
040855	P20-8	10.48	13.490	3.010
040855	P21-1	10.48	8.758	-1.722
040855	P21-2	10.48	8.358	-2.122
040855	P21-3	10.48	10.433	-.047
040855	P21-4	10.48	8.376	-2.104
040855	P21-5	10.48	11.224	.744
040855	P21-6	10.48	13.154	2.674
040855	P21-7	10.48	15.842	5.362
040855	P21-8	10.48	13.911	3.431
040855	P24-1	10.48	47.253	36.773
040855	P24-2	10.48	58.318	47.838
040855	P24-3	10.48	89.653	79.173
040855	P24-4	10.48	290.530	280.050
040855	P24-5	10.48	184.248	173.768
040855	P24-6	10.48	245.578	235.098
040855	P24-7	10.48	255.946	245.466
040855	P24-8	10.48	252.833	242.353

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040850	P22-1	10.48	16.410	5.930
040850	P22-2	10.48	16.952	6.472
040850	P22-3	10.48	34.700	24.220
040850	P22-4	10.48	38.741	28.261
040850	P22-5	10.48	31.762	21.282
040850	P22-6	10.48	31.767	21.287
040850	P22-7	10.48	44.846	34.406
040850	P22-8	10.48	44.845	34.365
040850	P23-1	10.48	69.171	58.691
040850	P23-2	10.48	48.010	37.530
040850	P23-3	10.48	178.378	167.898
040850	P23-4	10.48	216.265	205.725
040850	P23-5	10.48	101.552	91.072
040850	P23-6	10.48	133.965	123.485
040850	P23-7	10.48	135.168	124.688
040850	P23-8	10.48	178.274	167.794
040850	P25-1	10.48	16.844	6.364
040850	P25-2	10.48	16.081	5.601
040850	P25-3	10.48	20.027	9.547
040850	P25-4	10.48	14.263	3.783
040850	P25-5	10.48	20.653	10.173
040850	P25-6	10.48	22.208	11.728
040850	P25-7	10.48	52.590	42.110
040850	P25-8	10.48	129.208	118.728
040850	P26-1	10.48	27.451	16.971
040850	P26-2	10.48	22.527	12.047
040850	P26-3	10.48	34.244	23.764
040850	P26-4	10.48	32.444	21.964
040850	P26-5	10.48	72.392	61.912
040850	P26-6	10.48	61.152	50.672
040850	P26-7	10.48	163.617	153.137
040850	P26-8	10.48	134.105	123.625
040850	P27-1	10.48	19.442	9.002
040850	P27-2	10.48	16.157	5.677
040850	P27-3	10.48	19.060	8.580
040850	P27-4	10.48	19.016	8.536
040850	P27-5	10.48	18.721	8.241
040850	P27-6	10.48	22.256	11.786
040850	P27-7	10.48	91.483	81.003
040850	P27-8	10.48	41.802	31.322
040850	P28-1	10.48	11.078	.598
040850	P28-2	10.48	12.810	2.330
040850	P28-3	10.48	11.874	1.394
040850	P28-4	10.48	13.037	2.557
040850	P28-5	10.48	14.154	3.674
040850	P28-6	10.48	15.206	4.806
040850	P28-7	10.48	37.250	26.770
040850	P28-8	10.48	20.404	9.924
040850	P29-1	10.48	15.117	4.637
040850	P29-2	10.48	16.095	5.615
040850	P29-3	10.48	14.838	4.358
040850	P29-4	10.48	13.737	3.257
040850	P29-5	10.48	13.407	2.927
040850	P29-6	10.48	11.566	1.086
040850	P29-7	10.48	21.543	11.103
040850	P29-8	10.48	18.437	7.957
040850	P30-1	10.48	12.492	2.012
040850	P30-2	10.48	10.604	.124
040850	P30-3	10.48	9.978	-.502
040850	P30-4	10.48	9.826	-.654
040850	P30-5	10.48	9.491	-.989
040850	P30-6	10.48	10.590	.110
040850	P30-7	10.48	11.263	.783
040850	P30-8	10.48	9.448	-1.032
040850	P31-1	10.48	10.977	.497
040850	P31-2	10.48	11.206	.726
040850	P31-3	10.48	10.542	.062
040850	P31-4	10.48	9.181	-1.299
040850	P31-5	10.48	10.886	.406
040850	P31-6	10.48	9.473	-1.007
040850	P31-7	10.48	12.623	2.143
040850	P31-8	10.48	10.898	.418
040850	P24-1	10.48	52.198	41.718
040850	P24-2	10.48	71.702	61.222
040850	P24-3	10.48	95.389	84.909
040850	P24-4	10.48	274.352	263.872
040850	P24-5	10.48	120.168	109.688
040850	P24-6	10.48	244.290	233.810
040850	P24-7	10.48	268.452	257.972
040850	P24-8	10.48	257.901	247.421

7. TEF 0

8. TRI 0

9. TRI E

END OF DATA PROCESSING ROUTINE.

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040857	P32-1	10.48	12.571	2.091
040857	P32-2	10.48	11.080	.600
040857	P32-3	10.48	10.599	.119
040857	P32-4	10.48	11.620	1.140
040857	P32-5	10.48	13.312	2.832
040857	P32-6	10.48	13.315	2.835
040857	P32-7	10.48	14.683	4.203
040857	P32-8	10.48	17.973	7.493
040857	P33-1	10.48	22.878	12.398
040857	P33-2	10.48	18.062	7.582
040857	P33-3	10.48	19.991	9.511
040857	P33-4	10.48	22.261	11.781
040857	P33-5	10.48	33.961	23.481
040857	P33-6	10.48	31.547	21.067
040857	P33-7	10.48	33.106	22.626
040857	P33-8	10.48	39.428	29.008
040857	P34-1	10.48	14.991	4.511
040857	P34-2	10.48	12.084	1.604
040857	P34-3	10.48	11.610	1.130
040857	P34-4	10.48	11.499	1.019
040857	P34-5	10.48	14.292	3.812
040857	P34-6	10.48	11.857	1.377
040857	P34-7	10.48	24.458	13.978
040857	P34-8	10.48	16.264	5.784
040857	P35-1	10.48	11.369	.889
040857	P35-2	10.48	12.063	1.583
040857	P35-3	10.48	15.286	4.806
040857	P35-4	10.48	17.106	6.626
040857	P35-5	10.48	17.929	7.449
040857	P35-6	10.48	17.379	6.899
040857	P35-7	10.48	26.199	15.719
040857	P35-8	10.48	74.481	64.001
040857	P36-1	10.48	19.081	8.601
040857	P36-2	10.48	16.550	6.070
040857	P36-3	10.48	19.723	9.283
040857	P36-4	10.48	18.621	8.141
040857	P36-5	10.48	31.922	21.442
040857	P36-6	10.48	22.478	11.998
040857	P36-7	10.48	86.586	76.106
040857	P36-8	10.48	34.002	23.522
040857	P37-1	10.48	11.612	1.132
040857	P37-2	10.48	11.346	.866
040857	P37-3	10.48	15.515	5.035
040857	P37-4	10.48	12.809	2.329
040857	P37-5	10.48	17.109	6.629
040857	P37-6	10.48	17.487	7.007
040857	P37-7	10.48	48.822	38.342
040857	P37-8	10.48	39.132	28.652
040857	P38-1	10.48	13.643	3.163
040857	P38-2	10.48	12.700	2.220
040857	P38-3	10.48	11.678	1.198
040857	P38-4	10.48	14.760	4.280
040857	P38-5	10.48	12.422	1.942
040857	P38-6	10.48	13.537	3.057
040857	P38-7	10.48	15.102	4.622
040857	P38-8	10.48	15.971	5.491
040857	P40-1	10.48	11.343	.863
040857	P40-2	10.48	9.790	-.690
040857	P40-3	10.48	8.652	-1.828
040857	P40-4	10.48	9.964	-.516
040857	P40-5	10.48	16.576	6.096
040857	P40-6	10.48	11.239	.759
040857	P40-7	10.48	15.483	5.003
040857	P40-8	10.48	13.427	3.007
040857	P41-1	10.48	13.355	2.875
040857	P41-2	10.48	10.800	.320
040857	P41-3	10.48	12.093	1.613
040857	P41-4	10.48	13.164	2.684
040857	P41-5	10.48	15.532	5.052
040857	P41-6	10.48	13.317	2.837
040857	P41-7	10.48	16.511	6.031
040857	P41-8	10.48	17.776	7.296
040857	P42-1	10.48	10.055	-.425
040857	P42-2	10.48	9.161	-1.319
040857	P42-3	10.48	11.535	1.055
040857	P42-4	10.48	11.262	.802
040857	P42-5	10.48	10.227	-.253
040857	P42-6	10.48	11.720	1.280
040857	P42-7	10.48	9.704	-.776
040857	P42-8	10.48	21.843	11.363
040857	P24-1	10.48	55.761	45.281
040857	P24-2	10.48	53.169	42.689
040857	P24-3	10.48	90.425	79.965
040857	P24-4	10.48	271.752	261.272
040857	P24-5	10.48	189.844	179.364
040857	P24-6	10.48	248.638	238.158
040857	P24-7	10.48	266.571	256.111
040857	P24-8	10.48	267.126	256.646

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040858	P44-1	10.48	11.912	1.432
040858	P44-2	10.48	13.472	2.992
040858	P44-3	10.48	12.537	2.057
040858	P44-4	10.48	11.409	.929
040858	P44-5	10.48	11.911	1.431
040858	P44-6	10.48	12.233	1.753
040858	P44-7	10.48	12.427	1.947
040858	P44-8	10.48	22.978	12.493
040858	P45-1	10.48	14.600	4.120
040858	P45-2	10.48	11.266	.786
040858	P45-3	10.48	14.432	3.952
040858	P45-4	10.48	13.877	3.397
040858	P45-5	10.48	12.814	2.334
040858	P45-6	10.48	14.591	4.111
040858	P45-7	10.48	20.879	10.399
040858	P45-8	10.48	15.731	5.251
040858	P46-1	10.48	12.452	1.972
040858	P46-2	10.48	11.965	1.515
040858	P46-3	10.48	11.436	.956
040858	P46-4	10.48	11.820	1.340
040858	P46-5	10.48	11.298	.818
040858	P46-6	10.48	10.912	.432
040858	P46-7	10.48	11.823	1.343
040858	P46-8	10.48	10.756	.276
040858	P47-1	10.48	9.260	-1.220
040858	P47-2	10.48	11.550	1.070
040858	P47-3	10.48	9.513	-.967
040858	P47-4	10.48	11.457	.977
040858	P47-5	10.48	11.610	1.130
040858	P47-6	10.48	10.594	.114
040858	P47-7	10.48	11.238	.758
040858	P47-8	10.48	11.034	.554
040858	P48-1	10.48	10.963	.483
040858	P48-2	10.48	11.296	.816
040858	P48-3	10.48	12.606	2.126
040858	P48-4	10.48	11.766	1.286
040858	P48-5	10.48	13.407	2.927
040858	P48-6	10.48	11.048	.568
040858	P48-7	10.48	12.100	1.620
040858	P48-8	10.48	14.441	3.961
040858	P49-1	10.48	11.632	1.152
040858	P49-2	10.48	12.860	2.380
040858	P49-3	10.48	11.916	1.436
040858	P49-4	10.48	12.381	1.901
040858	P49-5	10.48	12.208	1.818
040858	P49-6	10.48	10.955	.475
040858	P49-7	10.48	13.825	3.405
040858	P49-8	10.48	14.706	4.226
040858	P50-1	10.48	11.779	1.299
040858	P50-2	10.48	13.603	3.123
040858	P50-3	10.48	13.053	2.573
040858	P50-4	10.48	11.724	1.244
040858	P50-5	10.48	12.446	1.966
040858	P50-6	10.48	11.607	1.127
040858	P50-7	10.48	12.446	1.966
040858	P50-8	10.48	11.397	.917
040858	P51-1	10.48	13.283	2.803
040858	P51-2	10.48	13.704	3.224
040858	P51-3	10.48	13.398	2.918
040858	P51-4	10.48	14.307	3.827
040858	P51-5	10.48	13.335	2.855
040858	P51-6	10.48	13.266	2.726
040858	P51-7	10.48	13.898	3.418
040858	P51-8	10.48	14.873	4.393
040858	P52-1	10.48	13.444	3.004
040858	P52-2	10.48	12.575	2.095
040858	P52-3	10.48	12.158	1.678
040858	P52-4	10.48	12.151	1.671
040858	P52-5	10.48	10.564	.024
040858	P52-6	10.48	11.924	1.444
040858	P52-7	10.48	10.969	.489
040858	P52-8	10.48	13.057	2.577
040858	P53-1	10.48	10.328	-.152
040858	P53-2	10.48	10.548	.068
040858	P53-3	10.48	10.195	-.285
040858	P53-4	10.48	11.158	.678
040858	P53-5	10.48	11.658	1.178
040858	P53-6	10.48	11.500	1.020
040858	P53-7	10.48	11.354	.874
040858	P53-8	10.48	12.050	1.570
040858	P24-1	10.48	49.575	39.095
040858	P24-2	10.48	63.404	52.924
040858	P24-3	10.48	97.760	87.280
040858	P24-4	10.48	307.656	297.176
040858	P24-5	10.48	264.078	193.598
040858	P24-6	10.48	247.128	236.648
040858	P24-7	10.48	276.978	266.498
040858	P24-8	10.48	271.138	260.658

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040859	P54-1	10.48	10.219	-0.261
040859	P54-2	10.48	11.967	1.487
040859	P54-3	10.48	10.778	.298
040859	P54-4	10.48	13.090	2.610
040859	P54-5	10.48	12.134	1.654
040859	P54-6	10.48	14.727	4.247
040859	P54-7	10.48	11.571	1.091
040859	P54-8	10.48	17.584	7.104
040859	P55-1	10.48	11.151	.671
040859	P55-2	10.48	15.268	4.788
040859	P55-3	10.48	16.335	5.855
040859	P55-4	10.48	12.597	2.117
040859	P55-5	10.48	10.225	-.255
040859	P55-6	10.48	13.492	3.012
040859	P55-7	10.48	13.865	3.385
040859	P55-8	10.48	15.565	5.105
040859	P56-1	10.48	16.065	5.585
040859	P56-2	10.48	12.557	2.077
040859	P56-3	10.48	12.182	1.702
040859	P56-4	10.48	11.665	1.185
040859	P56-5	10.48	11.499	1.019
040859	P56-6	10.48	14.879	4.399
040859	P56-7	10.48	12.506	2.026
040859	P56-8	10.48	10.720	.240
040859	P57-1	10.48	10.656	.176
040859	P57-2	10.48	10.932	.452
040859	P57-3	10.48	11.624	1.144
040859	P57-4	10.48	11.913	1.433
040859	P57-5	10.48	12.474	1.994
040859	P57-6	10.48	11.969	1.489
040859	P57-7	10.48	16.274	5.794
040859	P57-8	10.48	10.586	.106
040859	P58-1	10.48	11.457	.977
040859	P58-2	10.48	13.493	3.013
040859	P58-3	10.48	10.910	.430
040859	P58-4	10.48	13.954	3.474
040859	P58-5	10.48	10.675	.195
040859	P58-6	10.48	10.249	-.231
040859	P58-7	10.48	8.841	-1.639
040859	P58-8	10.48	14.149	3.669
040859	P59-1	10.48	16.980	6.500
040859	P59-2	10.48	16.953	6.473
040859	P59-3	10.48	14.393	3.913
040859	P59-4	10.48	17.376	6.896
040859	P59-5	10.48	16.566	6.086
040859	P59-6	10.48	11.795	1.315
040859	P59-7	10.48	15.257	4.777
040859	P59-8	10.48	15.771	5.291
040859	P60-1	10.48	12.480	2.000
040859	P60-2	10.48	11.158	.678
040859	P60-3	10.48	13.638	3.158
040859	P60-4	10.48	15.414	4.934
040859	P60-5	10.48	13.934	3.454
040859	P60-6	10.48	14.616	4.166
040859	P60-7	10.48	11.142	.662
040859	P60-8	10.48	12.589	2.109
040859	P61-1	10.48	14.096	3.616
040859	P61-2	10.48	14.020	3.540
040859	P61-3	10.48	12.651	2.181
040859	P61-4	10.48	17.254	6.774
040859	P61-5	10.48	14.216	3.736
040859	P61-6	10.48	13.854	3.374
040859	P61-7	10.48	12.411	1.931
040859	P61-8	10.48	18.331	7.851
040859	P24-1	10.48	55.290	44.810
040859	P24-2	10.48	55.349	44.869
040859	P24-3	10.48	95.602	85.122
040859	P24-4	10.48	303.167	292.687
040859	P24-5	10.48	200.127	189.647
040859	P24-6	10.48	240.730	230.250
040859	P24-7	10.48	262.138	251.658
040859	P24-8	10.48	270.956	260.476

36. TEF D

37. SELECT CAD21

PARAMETER TABLE CAD21 LOADED.

38. READ BCD DATA ON E

TEST CONDITIONS: FLOW:215GPM INJ:0.045GPM 4% NANOS TO P14 CASE 8

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040707	P1-1	8.24	14.266	6.056
040707	P1-2	8.24	11.946	3.606
040707	P1-3	8.24	13.307	5.157
040707	P1-4	8.24	13.035	4.795
040707	P1-5	8.24	13.733	5.493
040707	P1-6	8.24	11.042	2.842
040707	P1-7	8.24	15.559	7.319
040707	P1-8	8.24	9.730	1.490
040707	P2-1	8.24	12.400	4.160
040707	P2-2	8.24	5.918	-2.322
040707	P2-3	8.24	12.970	4.730
040707	P2-4	8.24	10.414	2.174
040707	P2-5	8.24	18.182	9.942
040707	P2-6	8.24	13.953	5.713
040707	P2-7	8.24	13.686	5.446
040707	P2-8	8.24	15.305	7.065
040707	P3-1	8.24	29.286	21.046
040707	P3-2	8.24	20.275	12.035
040707	P3-3	8.24	26.350	18.110
040707	P3-4	8.24	22.911	14.671
040707	P3-5	8.24	59.169	40.929
040707	P3-6	8.24	23.223	19.983
040707	P3-7	8.24	42.533	34.293
040707	P3-8	8.24	22.332	14.092
040707	P4-1	8.24	1742.979	1734.739
040707	P4-2	8.24	828.619	820.379
040707	P4-3	8.24	264.011	255.771
040707	P4-4	8.24	623.445	620.205
040707	P4-5	8.24	335.938	327.748
040707	P4-6	8.24	260.730	272.490
040707	P4-7	8.24	309.526	301.296
040707	P4-8	8.24	243.747	235.507
040707	P5-1	8.24	803.334	795.094
040707	P5-2	8.24	369.472	361.232
040707	P5-3	8.24	366.534	378.294
040707	P5-4	8.24	612.535	604.295
040707	P5-5	8.24	367.493	352.253
040707	P5-6	8.24	417.943	409.703
040707	P5-7	8.24	318.509	310.269
040707	P5-8	8.24	152.413	144.173
040707	P6-1	8.24	71.709	63.469
040707	P6-2	8.24	73.315	65.075
040707	P6-3	8.24	339.797	322.557
040707	P6-4	8.24	634.122	625.882
040707	P6-5	8.24	414.711	406.471
040707	P6-6	8.24	325.061	316.821
040707	P6-7	8.24	237.335	229.095
040707	P6-8	8.24	185.068	176.828
040707	P7-1	8.24	69.820	52.580
040707	P7-2	8.24	42.416	34.176
040707	P7-3	8.24	149.350	140.150
040707	P7-4	8.24	75.869	67.629
040707	P7-5	8.24	171.406	163.226
040707	P7-6	8.24	249.623	241.383
040707	P7-7	8.24	262.349	254.149
040707	P7-8	8.24	208.318	200.078
040707	P8-1	8.24	18.795	10.555
040707	P8-2	8.24	19.453	10.213
040707	P8-3	8.24	47.326	39.086
040707	P8-4	8.24	23.348	15.108
040707	P8-5	8.24	99.902	82.752
040707	P8-6	8.24	52.927	44.687
040707	P8-7	8.24	228.180	219.860
040707	P8-8	8.24	169.826	161.596
040707	P9-1	8.24	74.719	66.479
040707	P9-2	8.24	55.585	47.315
040707	P9-3	8.24	22.249	14.009
040707	P9-4	8.24	33.968	25.728
040707	P9-5	8.24	42.807	34.647
040707	P9-6	8.24	30.530	22.290
040707	P9-7	8.24	316.629	308.389
040707	P9-8	8.24	144.631	136.391
040707	P10-1	8.24	17.829	9.589
040707	P10-2	8.24	10.040	1.800
040707	P10-3	8.24	12.811	4.571
040707	P10-4	8.24	12.641	4.401
040707	P10-5	8.24	13.812	5.572
040707	P10-6	8.24	16.945	8.705
040707	P10-7	8.24	16.439	8.199
040707	P10-8	8.24	14.075	5.835
040707	P24-1	8.24	39.222	29.982
040707	P24-2	8.24	23.434	20.194
040707	P24-3	8.24	47.502	39.252
040707	P24-4	8.24	102.407	94.167
040707	P24-5	8.24	97.608	89.368
040707	P24-6	8.24	163.429	155.189
040707	P24-7	8.24	176.968	168.728
040707	P24-8	8.24	164.508	156.328

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040703	P11-1	8.24	7.485	-.835
040703	P11-2	8.24	9.248	1.003
040703	P11-3	8.24	7.993	-.247
040703	P11-4	8.24	9.005	.765
040703	P11-5	8.24	11.263	3.023
040703	P11-6	8.24	9.514	1.274
040703	P11-7	8.24	10.805	2.565
040703	P11-8	8.24	12.448	4.208
040703	P12-1	8.24	8.248	.048
040703	P12-2	8.24	15.265	6.965
040703	P12-3	8.24	14.453	6.213
040703	P12-4	8.24	12.831	4.591
040703	P12-5	8.24	15.186	6.946
040703	P12-6	8.24	18.302	10.062
040703	P12-7	8.24	29.058	20.818
040703	P12-8	8.24	26.650	18.410
040703	P13-1	8.24	91.536	83.296
040703	P13-2	8.24	94.268	86.028
040703	P13-3	8.24	262.132	253.892
040703	P13-4	8.24	219.015	210.775
040703	P13-5	8.24	111.567	103.327
040703	P13-6	8.24	102.354	94.114
040703	P13-7	8.24	101.383	93.143
040703	P13-8	8.24	32.491	24.251
040703	P15-1	8.24	67.641	59.401
040703	P15-2	8.24	55.703	47.463
040703	P15-3	8.24	179.132	170.892
040703	P15-4	8.24	346.277	338.037
040703	P15-5	8.24	125.976	118.736
040703	P15-6	8.24	283.476	275.236
040703	P15-7	8.24	249.797	241.557
040703	P15-8	8.24	207.078	198.838
040703	P16-1	8.24	55.446	47.206
040703	P16-2	8.24	49.913	41.673
040703	P16-3	8.24	168.027	159.787
040703	P16-4	8.24	43.406	40.166
040703	P16-5	8.24	235.232	227.042
040703	P16-6	8.24	99.469	91.169
040703	P16-7	8.24	181.296	173.056
040703	P16-8	8.24	160.936	152.696
040703	P17-1	8.24	41.240	33.000
040703	P17-2	8.24	15.878	7.638
040703	P17-3	8.24	31.880	23.640
040703	P17-4	8.24	30.775	22.535
040703	P17-5	8.24	121.344	113.604
040703	P17-6	8.24	30.593	22.353
040703	P17-7	8.24	175.845	167.605
040703	P17-8	8.24	99.014	90.774
040703	P18-1	8.24	14.146	5.906
040703	P18-2	8.24	15.148	6.908
040703	P18-3	8.24	15.855	7.615
040703	P18-4	8.24	19.075	10.835
040703	P18-5	8.24	17.977	9.737
040703	P18-6	8.24	15.286	7.046
040703	P18-7	8.24	98.477	90.237
040703	P18-8	8.24	52.397	44.157
040703	P19-1	8.24	14.769	6.529
040703	P19-2	8.24	14.942	6.702
040703	P19-3	8.24	12.805	4.565
040703	P19-4	8.24	13.684	5.444
040703	P19-5	8.24	14.476	6.236
040703	P19-6	8.24	11.738	3.498
040703	P19-7	8.24	56.560	48.320
040703	P19-8	8.24	54.109	45.949
040703	P20-1	8.24	11.043	2.803
040703	P20-2	8.24	11.677	3.437
040703	P20-3	8.24	8.017	-.223
040703	P20-4	8.24	9.661	1.421
040703	P20-5	8.24	11.296	3.056
040703	P20-6	8.24	10.156	1.916
040703	P20-7	8.24	7.354	-.886
040703	P20-8	8.24	10.197	1.957
040703	P21-1	8.24	6.642	-1.598
040703	P21-2	8.24	6.660	-1.580
040703	P21-3	8.24	8.107	-.133
040703	P21-4	8.24	6.883	-1.357
040703	P21-5	8.24	9.928	.688
040703	P21-6	8.24	9.128	.898
040703	P21-7	8.24	10.557	2.317
040703	P21-8	8.24	9.749	1.509
040703	P24-1	8.24	38.760	30.520
040703	P24-2	8.24	31.950	23.710
040703	P24-3	8.24	48.254	40.024
040703	P24-4	8.24	107.510	99.340
040703	P24-5	8.24	94.099	85.859
040703	P24-6	8.24	158.461	150.221
040703	P24-7	8.24	167.235	158.995
040703	P24-8	8.24	154.978	146.738

TEST CONDITIONS: FLOW:215GPM INQ:0.045GPM 4% NANO3 TO P14 CASE 3

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040709	P22-1	8.24	15.547	7.307
040709	P22-2	8.24	15.621	7.381
040709	P22-3	8.24	35.992	27.752
040709	P22-4	8.24	39.973	30.733
040709	P22-5	8.24	30.958	22.713
040709	P22-6	8.24	30.445	22.205
040709	P22-7	8.24	37.241	29.001
040709	P22-8	8.24	34.675	26.435
040709	P23-1	8.24	40.317	40.077
040709	P23-2	8.24	36.382	28.062
040709	P23-3	8.24	126.751	118.511
040709	P23-4	8.24	156.213	147.973
040709	P23-5	8.24	69.934	61.694
040709	P23-6	8.24	88.113	79.873
040709	P23-7	8.24	83.176	74.936
040709	P23-8	8.24	115.715	107.475
040709	P25-1	8.24	12.343	4.103
040709	P25-2	8.24	11.145	2.905
040709	P25-3	8.24	15.973	7.733
040709	P25-4	8.24	11.371	3.131
040709	P25-5	8.24	13.986	4.856
040709	P25-6	8.24	13.655	5.415
040709	P25-7	8.24	33.132	24.892
040709	P25-8	8.24	71.760	63.520
040709	P26-1	8.24	19.830	11.590
040709	P26-2	8.24	16.920	8.680
040709	P26-3	8.24	18.984	10.744
040709	P26-4	8.24	18.745	10.505
040709	P26-5	8.24	39.177	30.937
040709	P26-6	8.24	30.769	22.529
040709	P26-7	8.24	82.456	74.216
040709	P26-8	8.24	65.879	57.639
040709	P27-1	8.24	15.540	7.300
040709	P27-2	8.24	13.302	5.062
040709	P27-3	8.24	14.806	6.566
040709	P27-4	8.24	16.502	8.262
040709	P27-5	8.24	13.813	5.573
040709	P27-6	8.24	14.793	6.553
040709	P27-7	8.24	46.498	38.258
040709	P27-8	8.24	25.168	16.928
040709	P28-1	8.24	10.938	2.748
040709	P28-2	8.24	11.413	3.173
040709	P28-3	8.24	10.064	1.824
040709	P28-4	8.24	12.361	4.121
040709	P28-5	8.24	11.266	3.026
040709	P28-6	8.24	13.089	4.829
040709	P28-7	8.24	21.429	13.189
040709	P28-8	8.24	15.282	7.042
040709	P29-1	8.24	15.016	6.776
040709	P29-2	8.24	14.037	5.857
040709	P29-3	8.24	13.508	5.268
040709	P29-4	8.24	12.714	4.474
040709	P29-5	8.24	13.700	5.460
040709	P29-6	8.24	10.472	2.232
040709	P29-7	8.24	17.579	9.339
040709	P29-8	8.24	14.999	6.759
040709	P30-1	8.24	9.460	1.220
040709	P30-2	8.24	8.345	.105
040709	P30-3	8.24	8.286	.046
040709	P30-4	8.24	8.641	.401
040709	P30-5	8.24	7.977	-.263
040709	P30-6	8.24	8.276	.036
040709	P30-7	8.24	10.277	2.037
040709	P30-8	8.24	8.440	.200
040709	P31-1	8.24	9.639	1.399
040709	P31-2	8.24	9.551	1.311
040709	P31-3	8.24	9.049	.809
040709	P31-4	8.24	10.357	2.117
040709	P31-5	8.24	9.302	1.062
040709	P31-6	8.24	9.896	1.656
040709	P31-7	8.24	10.198	1.958
040709	P31-8	8.24	9.908	1.668
040709	P24-1	8.24	43.427	35.187
040709	P24-2	8.24	36.614	28.374
040709	P24-3	8.24	52.382	44.102
040709	P24-4	8.24	105.327	97.087
040709	P24-5	8.24	98.276	90.036
040709	P24-6	8.24	161.213	152.973
040709	P24-7	8.24	168.895	160.645
040709	P24-8	8.24	155.348	147.108

39. TEF D

40. ENTER CAD14

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PARAMETER TABLE CAD14 DATED 10 APR 71 ADDRESS 1262360 DELETED

PARAMETER TABLE CAD14 DATED 10 APR 71 ENTERED, LOC 1264880

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040710	P32-1	8.24	10.806	2.566
040710	P32-2	8.24	9.324	1.084
040710	P32-3	8.24	9.060	.760
040710	P32-4	8.24	10.438	2.198
040710	P32-5	8.24	11.223	2.983
040710	P32-6	8.24	11.452	3.212
040710	P32-7	8.24	13.980	5.740
040710	P32-8	8.24	15.370	7.130
040710	P33-1	8.24	18.108	9.868
040710	P33-2	8.24	13.747	5.507
040710	P33-3	8.24	14.725	6.485
040710	P33-4	8.24	11.248	3.008
040710	P33-5	8.24	25.253	17.013
040710	P33-6	8.24	24.498	16.258
040710	P33-7	8.24	24.687	16.447
040710	P33-8	8.24	30.087	21.847
040710	P34-1	8.24	11.529	3.289
040710	P34-2	8.24	9.777	1.537
040710	P34-3	8.24	8.703	.463
040710	P34-4	8.24	9.993	1.753
040710	P34-5	8.24	10.541	2.301
040710	P34-6	8.24	9.571	1.331
040710	P34-7	8.24	17.758	9.518
040710	P34-8	8.24	11.398	3.158
040710	P35-1	8.24	8.303	.063
040710	P35-2	8.24	9.721	1.481
040710	P35-3	8.24	12.208	4.048
040710	P35-4	8.24	11.616	3.376
040710	P35-5	8.24	13.340	5.100
040710	P35-6	8.24	12.558	4.318
040710	P35-7	8.24	17.309	9.069
040710	P35-8	8.24	42.466	34.226
040710	P36-1	8.24	15.356	7.116
040710	P36-2	8.24	13.171	4.931
040710	P36-3	8.24	14.129	5.889
040710	P36-4	8.24	13.644	5.404
040710	P36-5	8.24	18.537	10.297
040710	P36-6	8.24	14.608	6.368
040710	P36-7	8.24	50.672	42.432
040710	P36-8	8.24	23.271	15.031
040710	P37-1	8.24	9.815	1.575
040710	P37-2	8.24	9.016	.776
040710	P37-3	8.24	12.035	3.795
040710	P37-4	8.24	10.334	2.094
040710	P37-5	8.24	12.070	3.830
040710	P37-6	8.24	13.855	5.615
040710	P37-7	8.24	27.910	19.670
040710	P37-8	8.24	22.876	14.636
040710	P38-1	8.24	11.352	3.112
040710	P38-2	8.24	10.969	2.729
040710	P38-3	8.24	10.089	1.849
040710	P38-4	8.24	11.356	3.116
040710	P38-5	8.24	10.427	2.187
040710	P38-6	8.24	11.394	3.154
040710	P38-7	8.24	11.306	3.066
040710	P38-8	8.24	11.698	3.458
040710	P40-1	8.24	9.084	.844
040710	P40-2	8.24	8.260	.020
040710	P40-3	8.24	9.610	1.370
040710	P40-4	8.24	9.944	1.704
040710	P40-5	8.24	13.061	4.821
040710	P40-6	8.24	10.841	2.601
040710	P40-7	8.24	12.717	4.477
040710	P40-8	8.24	11.337	3.097
040710	P41-1	8.24	11.179	2.939
040710	P41-2	8.24	10.007	1.767
040710	P41-3	8.24	10.300	2.060
040710	P41-4	8.24	11.157	2.917
040710	P41-5	8.24	12.457	4.217
040710	P41-6	8.24	11.109	2.869
040710	P41-7	8.24	13.621	5.381
040710	P41-8	8.24	14.319	6.079
040710	P42-1	8.24	8.618	.378
040710	P42-2	8.24	8.781	.541
040710	P42-3	8.24	9.003	.763
040710	P42-4	8.24	8.302	.142
040710	P42-5	8.24	8.213	-.027
040710	P42-6	8.24	9.795	1.555
040710	P42-7	8.24	9.474	1.234
040710	P42-8	8.24	14.034	5.794
040710	P24-1	8.24	43.824	35.584
040710	P24-2	8.24	36.440	28.200
040710	P24-3	8.24	51.034	42.794
040710	P24-4	8.24	113.446	105.206
040710	P24-5	8.24	99.843	91.603
040710	P24-6	8.24	167.810	159.570
040710	P24-7	8.24	177.505	169.355
040710	P24-8	8.24	154.969	146.729

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040711	P44-1	8.24	291.487	283.247
040711	P44-2	8.24	34.151	25.911
040711	P44-3	8.24	16.022	7.782
040711	P44-4	8.24	13.009	4.769
040711	P44-5	8.24	28.011	19.771
040711	P44-6	8.24	15.974	7.734
040711	P44-7	8.24	42.990	34.750
040711	P44-8	8.24	48.488	40.243
040711	P45-1	8.24	10.589	2.349
040711	P45-2	8.24	9.053	.813
040711	P45-3	8.24	12.142	3.902
040711	P45-4	8.24	12.316	4.076
040711	P45-5	8.24	9.478	1.238
040711	P45-6	8.24	10.936	2.696
040711	P45-7	8.24	14.228	5.988
040711	P45-8	8.24	12.704	4.464
040711	P46-1	8.24	10.721	2.481
040711	P46-2	8.24	10.183	1.943
040711	P46-3	8.24	9.091	.851
040711	P46-4	8.24	10.274	2.034
040711	P46-5	8.24	8.718	.478
040711	P46-6	8.24	8.857	.617
040711	P46-7	8.24	9.564	1.344
040711	P46-8	8.24	8.638	.398
040711	P47-1	8.24	7.316	-.924
040711	P47-2	8.24	8.865	.625
040711	P47-3	8.24	7.886	-.354
040711	P47-4	8.24	8.358	.118
040711	P47-5	8.24	9.178	.938
040711	P47-6	8.24	9.370	1.130
040711	P47-7	8.24	9.515	1.275
040711	P47-8	8.24	9.890	1.650
040711	P48-1	8.24	8.484	.244
040711	P48-2	8.24	8.204	-.036
040711	P48-3	8.24	9.691	1.451
040711	P48-4	8.24	8.573	.333
040711	P48-5	8.24	10.353	2.113
040711	P48-6	8.24	8.080	-.160
040711	P48-7	8.24	9.420	1.180
040711	P48-8	8.24	10.731	2.491
040711	P49-1	8.24	8.545	.305
040711	P49-2	8.24	10.122	1.882
040711	P49-3	8.24	3.846	.606
040711	P49-4	8.24	8.165	-.075
040711	P49-5	8.24	8.934	.694
040711	P49-6	8.24	6.722	-1.518
040711	P49-7	8.24	10.108	1.868
040711	P49-8	8.24	11.208	2.963
040711	P50-1	8.24	10.120	1.880
040711	P50-2	8.24	10.944	2.704
040711	P50-3	8.24	10.808	2.563
040711	P50-4	8.24	9.935	1.695
040711	P50-5	8.24	9.621	1.441
040711	P50-6	8.24	10.865	2.625
040711	P50-7	8.24	8.806	.566
040711	P50-8	8.24	10.043	1.803
040711	P51-1	8.24	13.260	5.020
040711	P51-2	8.24	12.488	4.248
040711	P51-3	8.24	13.106	4.866
040711	P51-4	8.24	12.290	4.050
040711	P51-5	8.24	11.037	2.797
040711	P51-6	8.24	11.344	3.604
040711	P51-7	8.24	11.109	2.869
040711	P51-8	8.24	11.753	3.513
040711	P52-1	8.24	9.722	1.482
040711	P52-2	8.24	3.762	.522
040711	P52-3	8.24	10.212	1.972
040711	P52-4	8.24	9.720	1.480
040711	P52-5	8.24	8.293	.053
040711	P52-6	8.24	9.689	1.449
040711	P52-7	8.24	8.310	.070
040711	P52-8	8.24	10.250	2.010
040711	P53-1	8.24	8.131	-.109
040711	P53-2	8.24	7.867	-.373
040711	P53-3	8.24	8.309	.159
040711	P53-4	8.24	8.221	-.019
040711	P53-5	8.24	9.851	1.611
040711	P53-6	8.24	7.352	-.878
040711	P53-7	8.24	8.072	-.168
040711	P53-8	8.24	9.946	.706
040711	P24-1	8.24	43.924	35.684
040711	P24-2	8.24	35.836	27.596
040711	P24-3	8.24	50.572	42.332
040711	P24-4	8.24	107.538	99.298
040711	P24-5	8.24	98.964	90.724
040711	P24-6	8.24	165.737	157.497
040711	P24-7	8.24	179.553	171.313
040711	P24-8	8.24	156.116	147.906

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040712	P54-1	8.24	9.163	.903
040712	P54-2	8.24	9.672	1.432
040712	P54-3	8.24	8.294	.054
040712	P54-4	8.24	10.366	2.146
040712	P54-5	8.24	9.107	.867
040712	P54-6	8.24	9.777	1.537
040712	P54-7	8.24	8.175	-.065
040712	P54-8	8.24	12.755	4.515
040712	P55-1	8.24	10.965	2.725
040712	P55-2	8.24	10.641	2.441
040712	P55-3	8.24	13.685	5.445
040712	P55-4	8.24	8.757	.517
040712	P55-5	8.24	9.225	.985
040712	P55-6	8.24	9.875	1.635
040712	P55-7	8.24	11.985	3.745
040712	P55-8	8.24	9.612	1.372
040712	P56-1	8.24	14.969	6.729
040712	P56-2	8.24	11.326	3.086
040712	P56-3	8.24	11.710	3.470
040712	P56-4	8.24	11.818	3.578
040712	P56-5	8.24	9.911	1.671
040712	P56-6	8.24	11.027	2.787
040712	P56-7	8.24	11.422	3.182
040712	P56-8	8.24	8.696	.456
040712	P57-1	8.24	9.515	1.275
040712	P57-2	8.24	9.054	.814
040712	P57-3	8.24	9.473	1.233
040712	P57-4	8.24	10.009	1.769
040712	P57-5	8.24	11.419	3.179
040712	P57-6	8.24	9.082	.842
040712	P57-7	8.24	13.819	5.579
040712	P57-8	8.24	8.360	.120
040712	P58-1	8.24	7.537	-.703
040712	P58-2	8.24	9.942	1.702
040712	P58-3	8.24	9.675	1.435
040712	P58-4	8.24	11.836	3.566
040712	P58-5	8.24	9.561	.301
040712	P58-6	8.24	8.574	.334
040712	P58-7	8.24	7.213	-1.027
040712	P58-8	8.24	11.615	3.375
040712	P59-1	8.24	12.633	10.393
040712	P59-2	8.24	21.437	13.197
040712	P59-3	8.24	12.569	4.329
040712	P59-4	8.24	16.674	8.434
040712	P59-5	8.24	15.380	7.110
040712	P59-6	8.24	8.319	.079
040712	P59-7	8.24	14.759	6.559
040712	P59-8	8.24	13.098	4.858
040712	P60-1	8.24	11.124	2.884
040712	P60-2	8.24	9.740	1.540
040712	P60-3	8.24	10.251	2.011
040712	P60-4	8.24	14.015	5.775
040712	P60-5	8.24	12.668	4.428
040712	P60-6	8.24	11.467	3.247
040712	P60-7	8.24	9.523	.263
040712	P60-8	8.24	12.161	3.861
040712	P61-1	8.24	10.514	2.274
040712	P61-2	8.24	11.440	3.200
040712	P61-3	8.24	11.215	3.045
040712	P61-4	8.24	12.266	4.026
040712	P61-5	8.24	10.659	2.419
040712	P61-6	8.24	11.263	3.023
040712	P61-7	8.24	9.467	1.227
040712	P61-8	8.24	14.435	6.195
040712	P24-1	8.24	43.656	35.416
040712	P24-2	8.24	34.657	26.417
040712	P24-3	8.24	49.445	41.255
040712	P24-4	8.24	117.289	109.049
040712	P24-5	8.24	100.285	92.045
040712	P24-6	8.24	167.029	158.789
040712	P24-7	8.24	178.252	170.012
040712	P24-8	8.24	153.061	144.761

51. TEF D

52. ENTER CAD11

PARAMETER TABLE CAD11 DATED 10 APR 71 ADDRESS 1263600 DELETED

PARAMETER TABLE CAD11 DATED 10 APR 71 ENTERED, LOC 1266120

53. SELECT CAD11

PARAMETER TABLE CAD11 LOADED.

54. READ BCD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040713	P1-1	8.24	8.278	.033
040713	P1-2	8.24	8.010	-.230
040713	P1-3	8.24	10.372	2.132
040713	P1-4	8.24	8.924	.684
040713	P1-5	8.24	10.811	2.571
040713	P1-6	8.24	9.775	.535
040713	P1-7	8.24	16.671	8.431
040713	P1-8	8.24	5.231	-3.009
040713	P2-1	8.24	13.054	4.814
040713	P2-2	8.24	2.554	-5.656
040713	P2-3	8.24	7.862	-.378
040713	P2-4	8.24	6.659	-1.541
040713	P2-5	8.24	16.237	7.997
040713	P2-6	8.24	11.340	3.100
040713	P2-7	8.24	19.879	11.639
040713	P2-8	8.24	9.529	1.289
040713	P3-1	8.24	50.442	42.202
040713	P3-2	8.24	27.066	18.826
040713	P3-3	8.24	37.146	28.906
040713	P3-4	8.24	27.664	19.424
040713	P3-5	8.24	96.269	87.969
040713	P3-6	8.24	35.542	27.302
040713	P3-7	8.24	72.716	64.476
040713	P3-8	8.24	31.963	23.723
040713	P4-1	8.24	4161.589	4153.349
040713	P4-2	8.24	1782.774	1774.534
040713	P4-3	8.24	560.948	552.708
040713	P4-4	8.24	1450.071	1450.831
040713	P4-5	8.24	743.037	734.797
040713	P4-6	8.24	610.557	602.317
040713	P4-7	8.24	589.712	581.472
040713	P4-8	8.24	459.916	451.676
040713	P5-1	8.24	1670.283	1661.963
040713	P5-2	8.24	644.980	636.740
040713	P5-3	8.24	743.844	735.604
040713	P5-4	8.24	1161.428	1153.188
040713	P5-5	8.24	736.335	728.095
040713	P5-6	8.24	851.361	843.121
040713	P5-7	8.24	632.674	624.434
040713	P5-8	8.24	283.048	274.808
040713	P6-1	8.24	146.728	140.488
040713	P6-2	8.24	139.135	130.895
040713	P6-3	8.24	917.840	909.600
040713	P6-4	8.24	1416.949	1408.699
040713	P6-5	8.24	1015.738	1007.498
040713	P6-6	8.24	762.238	753.998
040713	P6-7	8.24	633.250	625.010
040713	P6-8	8.24	359.860	351.620
040713	P7-1	8.24	103.231	99.961
040713	P7-2	8.24	87.786	79.546
040713	P7-3	8.24	440.055	431.815
040713	P7-4	8.24	151.447	145.257
040713	P7-5	8.24	453.554	445.314
040713	P7-6	8.24	531.767	523.527
040713	P7-7	8.24	346.144	337.904
040713	P7-8	8.24	399.763	390.523
040713	P8-1	8.24	27.670	19.430
040713	P8-2	8.24	22.749	14.509
040713	P8-3	8.24	97.735	89.495
040713	P8-4	8.24	31.866	23.626
040713	P8-5	8.24	173.724	170.484
040713	P8-6	8.24	77.157	68.917
040713	P8-7	8.24	531.547	523.307
040713	P8-8	8.24	215.456	207.216
040713	P9-1	8.24	134.937	126.697
040713	P9-2	8.24	86.436	78.196
040713	P9-3	8.24	31.934	23.694
040713	P9-4	8.24	55.507	47.267
040713	P9-5	8.24	72.542	64.302
040713	P9-6	8.24	46.466	38.226
040713	P9-7	8.24	584.070	575.830
040713	P9-8	8.24	333.096	324.856
040713	P10-1	8.24	12.049	3.809
040713	P10-2	8.24	5.331	-2.909
040713	P10-3	8.24	5.267	-2.973
040713	P10-4	8.24	9.913	1.673
040713	P10-5	8.24	8.862	.642
040713	P10-6	8.24	11.213	2.973
040713	P10-7	8.24	12.828	4.588
040713	P10-8	8.24	8.211	-.029
040713	P24-1	8.24	60.540	52.300
040713	P24-2	8.24	43.158	34.918
040713	P24-3	8.24	77.205	69.055
040713	P24-4	8.24	184.937	176.697
040713	P24-5	8.24	173.877	165.637
040713	P24-6	8.24	297.548	289.308
040713	P24-7	8.24	328.720	320.480
040713	P24-8	8.24	302.505	294.265

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040714	P11-1	8.24	8.302	.062
040714	P11-2	8.24	9.125	.885
040714	P11-3	8.24	9.123	.883
040714	P11-4	8.24	8.748	.508
040714	P11-5	8.24	10.235	2.045
040714	P11-6	8.24	10.247	2.047
040714	P11-7	8.24	11.979	3.739
040714	P11-8	8.24	15.909	7.669
040714	P12-1	8.24	11.043	2.803
040714	P12-2	8.24	13.819	10.579
040714	P12-3	8.24	19.504	11.264
040714	P12-4	8.24	17.329	9.089
040714	P12-5	8.24	23.367	15.127
040714	P12-6	8.24	26.922	18.682
040714	P12-7	8.24	46.248	38.008
040714	P12-8	8.24	37.746	29.506
040714	P13-1	8.24	159.855	151.615
040714	P13-2	8.24	172.479	164.239
040714	P13-3	8.24	476.547	468.307
040714	P13-4	8.24	398.773	390.533
040714	P13-5	8.24	203.460	195.220
040714	P13-6	8.24	185.329	177.089
040714	P13-7	8.24	162.070	173.830
040714	P13-8	8.24	59.174	50.934
040714	P15-1	8.24	113.071	104.831
040714	P15-2	8.24	92.603	84.443
040714	P15-3	8.24	346.238	337.998
040714	P15-4	8.24	635.107	626.867
040714	P15-5	8.24	231.239	229.999
040714	P15-6	8.24	528.572	520.332
040714	P15-7	8.24	476.397	468.157
040714	P15-8	8.24	387.062	378.822
040714	P16-1	8.24	87.243	79.003
040714	P16-2	8.24	73.284	65.044
040714	P16-3	8.24	316.340	308.100
040714	P16-4	8.24	82.683	74.443
040714	P16-5	8.24	437.234	428.994
040714	P16-6	8.24	191.566	183.326
040714	P16-7	8.24	345.870	337.630
040714	P16-8	8.24	301.342	293.102
040714	P17-1	8.24	69.038	60.793
040714	P17-2	8.24	23.893	15.653
040714	P17-3	8.24	60.426	52.186
040714	P17-4	8.24	53.187	44.947
040714	P17-5	8.24	239.088	230.843
040714	P17-6	8.24	55.174	46.934
040714	P17-7	8.24	337.733	329.493
040714	P17-8	8.24	190.815	182.575
040714	P18-1	8.24	14.023	9.783
040714	P18-2	8.24	20.313	12.073
040714	P18-3	8.24	22.010	13.770
040714	P18-4	8.24	25.415	17.175
040714	P18-5	8.24	25.721	18.481
040714	P18-6	8.24	20.032	11.792
040714	P18-7	8.24	189.213	180.973
040714	P18-8	8.24	105.809	92.569
040714	P19-1	8.24	17.683	9.443
040714	P19-2	8.24	20.454	12.214
040714	P19-3	8.24	15.432	8.192
040714	P19-4	8.24	17.651	9.411
040714	P19-5	8.24	21.098	12.858
040714	P19-6	8.24	15.212	7.972
040714	P19-7	8.24	108.287	100.047
040714	P19-8	8.24	104.021	95.781
040714	P20-1	8.24	12.734	4.494
040714	P20-2	8.24	12.829	4.589
040714	P20-3	8.24	3.823	.583
040714	P20-4	8.24	9.734	1.494
040714	P20-5	8.24	12.245	4.005
040714	P20-6	8.24	10.178	1.938
040714	P20-7	8.24	11.384	3.144
040714	P20-8	8.24	10.943	2.703
040714	P21-1	8.24	7.097	-1.143
040714	P21-2	8.24	7.099	-1.141
040714	P21-3	8.24	10.125	1.885
040714	P21-4	8.24	8.716	.476
040714	P21-5	8.24	10.944	2.704
040714	P21-6	8.24	12.561	4.351
040714	P21-7	8.24	15.602	7.362
040714	P21-8	8.24	13.656	5.416
040714	P24-1	8.24	68.944	60.704
040714	P24-2	8.24	55.716	47.476
040714	P24-3	8.24	84.347	76.107
040714	P24-4	8.24	190.024	181.844
040714	P24-5	8.24	174.466	166.226
040714	P24-6	8.24	299.602	291.362
040714	P24-7	8.24	318.431	306.191
040714	P24-8	8.24	287.564	279.324

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040715	P22-1	8.24	22.494	14.254
040715	P22-2	8.24	22.689	14.449
040715	P22-3	8.24	62.681	54.441
040715	P22-4	8.24	63.735	61.495
040715	P22-5	8.24	53.855	45.615
040715	P22-6	8.24	51.335	43.095
040715	P22-7	8.24	63.347	55.107
040715	P22-8	8.24	63.874	52.634
040715	P23-1	8.24	89.666	72.426
040715	P23-2	8.24	59.590	51.350
040715	P23-3	8.24	233.053	224.813
040715	P23-4	8.24	285.417	277.177
040715	P23-5	8.24	124.038	115.798
040715	P23-6	8.24	161.774	153.534
040715	P23-7	8.24	146.977	138.737
040715	P23-8	8.24	200.326	192.086
040715	P25-1	8.24	15.814	7.574
040715	P25-2	8.24	14.210	5.970
040715	P25-3	8.24	20.879	12.639
040715	P25-4	8.24	14.475	6.235
040715	P25-5	8.24	18.618	10.378
040715	P25-6	8.24	18.516	10.276
040715	P25-7	8.24	55.932	47.692
040715	P25-8	8.24	133.486	125.246
040715	P26-1	8.24	27.071	18.831
040715	P26-2	8.24	23.519	15.279
040715	P26-3	8.24	26.921	18.681
040715	P26-4	8.24	29.307	21.067
040715	P26-5	8.24	71.119	62.879
040715	P26-6	8.24	52.888	44.648
040715	P26-7	8.24	152.907	144.667
040715	P26-8	8.24	118.761	110.521
040715	P27-1	8.24	20.214	11.974
040715	P27-2	8.24	17.169	8.959
040715	P27-3	8.24	12.801	11.561
040715	P27-4	8.24	13.601	11.361
040715	P27-5	8.24	18.938	10.668
040715	P27-6	8.24	21.188	12.948
040715	P27-7	8.24	83.681	75.441
040715	P27-8	8.24	39.059	30.819
040715	P28-1	8.24	12.439	4.199
040715	P28-2	8.24	12.486	4.246
040715	P28-3	8.24	10.580	2.320
040715	P28-4	8.24	12.925	4.685
040715	P28-5	8.24	13.311	5.071
040715	P28-6	8.24	14.912	6.672
040715	P28-7	8.24	35.820	27.580
040715	P28-8	8.24	21.777	13.537
040715	P29-1	8.24	17.759	9.519
040715	P29-2	8.24	17.664	9.424
040715	P29-3	8.24	16.519	8.449
040715	P29-4	8.24	17.188	8.928
040715	P29-5	8.24	16.114	7.874
040715	P29-6	8.24	13.012	4.772
040715	P29-7	8.24	24.336	16.126
040715	P29-8	8.24	21.559	13.319
040715	P30-1	8.24	9.853	1.613
040715	P30-2	8.24	7.820	-.420
040715	P30-3	8.24	7.804	-.346
040715	P30-4	8.24	8.826	.586
040715	P30-5	8.24	7.167	-1.073
040715	P30-6	8.24	8.959	.719
040715	P30-7	8.24	9.426	1.186
040715	P30-8	8.24	7.838	-.352
040715	P31-1	8.24	10.047	1.807
040715	P31-2	8.24	10.382	2.142
040715	P31-3	8.24	7.677	1.437
040715	P31-4	8.24	10.463	2.223
040715	P31-5	8.24	9.738	1.498
040715	P31-6	8.24	10.548	2.308
040715	P31-7	8.24	11.119	2.879
040715	P31-8	8.24	10.674	2.434
040715	P24-1	8.24	77.617	69.367
040715	P24-2	8.24	61.780	53.460
040715	P24-3	8.24	91.331	83.091
040715	P24-4	8.24	190.539	182.359
040715	P24-5	8.24	179.483	171.163
040715	P24-6	8.24	301.821	293.581
040715	P24-7	8.24	315.275	307.035
040715	P24-8	8.24	288.036	279.856

63. TEF D

A-50

64. ENTER CAD14

PARAMETER TABLE CAD14 DATED 10 APR 71 ADDRESS 1264800 DELETED

PARAMETER TABLE CAD14 DATED 10 APR 71 ENTERED, LOC 1267400

TEST CONDITIONS: FLOW:2156PM INJ:0.096PM 4% NANO3 TO P14 CASE 9

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040716	P32-1	8.24	10.577	2.337
040716	P32-2	8.24	9.839	1.599
040716	P32-3	8.24	10.622	2.382
040716	P32-4	8.24	10.237	2.047
040716	P32-5	8.24	12.878	4.638
040716	P32-6	8.24	13.603	5.363
040716	P32-7	8.24	15.983	7.743
040716	P32-8	8.24	20.772	12.532
040716	P33-1	8.24	25.493	17.253
040716	P33-2	8.24	17.302	9.062
040716	P33-3	8.24	18.132	9.892
040716	P33-4	8.24	12.828	4.588
040716	P33-5	8.24	40.609	32.369
040716	P33-6	8.24	41.124	32.884
040716	P33-7	8.24	37.211	28.971
040716	P33-8	8.24	44.322	36.082
040716	P34-1	8.24	10.823	2.583
040716	P34-2	8.24	9.731	1.491
040716	P34-3	8.24	8.785	.555
040716	P34-4	8.24	9.320	1.080
040716	P34-5	8.24	12.028	3.788
040716	P34-6	8.24	9.393	1.153
040716	P34-7	8.24	24.187	15.947
040716	P34-8	8.24	14.387	6.147
040716	P35-1	8.24	21.220	12.980
040716	P35-2	8.24	8.954	.714
040716	P35-3	8.24	13.781	5.541
040716	P35-4	8.24	13.814	5.574
040716	P35-5	8.24	16.779	8.539
040716	P35-6	8.24	16.216	7.976
040716	P35-7	8.24	22.761	14.521
040716	P35-8	8.24	71.598	63.353
040716	P36-1	8.24	13.636	10.396
040716	P36-2	8.24	15.207	6.967
040716	P36-3	8.24	17.047	8.807
040716	P36-4	8.24	16.384	8.144
040716	P36-5	8.24	26.146	17.906
040716	P36-6	8.24	19.399	11.159
040716	P36-7	8.24	87.981	79.701
040716	P36-8	8.24	33.425	25.185
040716	P37-1	8.24	3.632	.392
040716	P37-2	8.24	9.424	1.184
040716	P37-3	8.24	15.869	7.649
040716	P37-4	8.24	9.277	1.037
040716	P37-5	8.24	12.352	4.112
040716	P37-6	8.24	16.214	7.974
040716	P37-7	8.24	42.786	34.546
040716	P37-8	8.24	30.360	22.120
040716	P38-1	8.24	9.524	1.284
040716	P38-2	8.24	9.985	1.715
040716	P38-3	8.24	7.304	-.936
040716	P38-4	8.24	11.513	3.273
040716	P38-5	8.24	9.064	-.146
040716	P38-6	8.24	9.594	1.354
040716	P38-7	8.24	17.502	2.262
040716	P38-8	8.24	12.886	4.646
040716	P40-1	8.24	9.079	.839
040716	P40-2	8.24	3.795	-4.445
040716	P40-3	8.24	5.117	-3.123
040716	P40-4	8.24	5.465	-2.835
040716	P40-5	8.24	13.051	4.811
040716	P40-6	8.24	8.666	.426
040716	P40-7	8.24	13.981	5.741
040716	P40-8	8.24	11.002	2.762
040716	P41-1	8.24	10.938	2.698
040716	P41-2	8.24	9.614	.374
040716	P41-3	8.24	10.844	2.604
040716	P41-4	8.24	11.038	2.798
040716	P41-5	8.24	11.135	2.895
040716	P41-6	8.24	10.315	2.075
040716	P41-7	8.24	13.510	5.270
040716	P41-8	8.24	16.421	8.181
040716	P42-1	8.24	6.902	-1.338
040716	P42-2	8.24	8.043	-.197
040716	P42-3	8.24	8.986	.746
040716	P42-4	8.24	7.691	-.549
040716	P42-5	8.24	8.301	.061
040716	P42-6	8.24	9.938	1.698
040716	P42-7	8.24	8.861	.621
040716	P42-8	8.24	19.274	11.034
040716	P24-1	8.24	74.490	66.250
040716	P24-2	8.24	58.521	50.281
040716	P24-3	8.24	89.292	81.052
040716	P24-4	8.24	204.628	196.448
040716	P24-5	8.24	185.348	177.103
040716	P24-6	8.24	314.537	306.297
040716	P24-7	8.24	333.787	325.467
040716	P24-8	8.24	289.384	281.104

TEST CONDITIONS: FLOW:215GPM INJ:0.09GPM 4% KANOS TO P14 CASE 9

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040717	P44-1	8.24	246.453	238.213
040717	P44-2	8.24	31.063	22.823
040717	P44-3	8.24	15.921	7.681
040717	P44-4	8.24	13.982	5.742
040717	P44-5	8.24	27.063	18.823
040717	P44-6	8.24	14.933	6.693
040717	P44-7	8.24	39.567	31.327
040717	P44-8	8.24	50.677	42.437
040717	P45-1	8.24	12.917	4.677
040717	P45-2	8.24	9.776	1.536
040717	P45-3	8.24	14.157	5.917
040717	P45-4	8.24	14.980	6.740
040717	P45-5	8.24	9.831	1.591
040717	P45-6	8.24	13.780	5.540
040717	P45-7	8.24	17.405	9.255
040717	P45-8	8.24	15.467	7.227
040717	P46-1	8.24	10.909	2.669
040717	P46-2	8.24	10.589	2.349
040717	P46-3	8.24	8.831	.591
040717	P46-4	8.24	10.317	2.077
040717	P46-5	8.24	9.431	1.191
040717	P46-6	8.24	8.897	.657
040717	P46-7	8.24	10.300	2.060
040717	P46-8	8.24	9.031	.791
040717	P47-1	8.24	8.346	.106
040717	P47-2	8.24	8.734	.494
040717	P47-3	8.24	8.309	.069
040717	P47-4	8.24	8.546	.306
040717	P47-5	8.24	8.610	1.370
040717	P47-6	8.24	8.848	.608
040717	P47-7	8.24	10.001	1.761
040717	P47-8	8.24	9.450	1.210
040717	P48-1	8.24	10.740	2.500
040717	P48-2	8.24	9.812	1.572
040717	P48-3	8.24	10.506	2.266
040717	P48-4	8.24	9.470	1.230
040717	P48-5	8.24	11.254	3.014
040717	P48-6	8.24	8.563	1.323
040717	P48-7	8.24	8.965	.725
040717	P48-8	8.24	13.603	5.453
040717	P49-1	8.24	10.626	2.386
040717	P49-2	8.24	11.220	2.980
040717	P49-3	8.24	9.444	1.204
040717	P49-4	8.24	10.069	1.829
040717	P49-5	8.24	11.135	2.895
040717	P49-6	8.24	7.132	-1.108
040717	P49-7	8.24	11.185	2.915
040717	P49-8	8.24	14.033	5.853
040717	P50-1	8.24	10.055	1.815
040717	P50-2	8.24	13.019	4.779
040717	P50-3	8.24	10.027	1.787
040717	P50-4	8.24	10.164	1.924
040717	P50-5	8.24	9.841	1.601
040717	P50-6	8.24	9.211	.971
040717	P50-7	8.24	10.654	2.414
040717	P50-8	8.24	9.535	1.295
040717	P51-1	8.24	12.820	4.580
040717	P51-2	8.24	11.052	2.852
040717	P51-3	8.24	13.925	5.685
040717	P51-4	8.24	12.015	3.775
040717	P51-5	8.24	11.600	3.450
040717	P51-6	8.24	11.798	3.558
040717	P51-7	8.24	10.954	2.714
040717	P51-8	8.24	11.212	2.972
040717	P52-1	8.24	9.763	1.523
040717	P52-2	8.24	9.413	1.173
040717	P52-3	8.24	10.839	2.599
040717	P52-4	8.24	10.290	2.050
040717	P52-5	8.24	8.368	.148
040717	P52-6	8.24	9.504	1.264
040717	P52-7	8.24	9.559	1.319
040717	P52-8	8.24	10.357	2.117
040717	P53-1	8.24	7.536	-.644
040717	P53-2	8.24	7.784	-.456
040717	P53-3	8.24	8.836	.596
040717	P53-4	8.24	8.752	.512
040717	P53-5	8.24	10.015	1.775
040717	P53-6	8.24	7.332	-.908
040717	P53-7	8.24	8.508	.268
040717	P53-8	8.24	7.599	-.641
040717	P24-1	8.24	75.492	67.252
040717	P24-2	8.24	58.770	50.530
040717	P24-3	8.24	89.063	80.823
040717	P24-4	8.24	207.986	192.746
040717	P24-5	8.24	180.975	172.735
040717	P24-6	8.24	311.125	302.885
040717	P24-7	8.24	339.263	331.023
040717	P24-8	8.24	239.673	281.443

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040718	P54-1	8.24	9.091	.851
040718	P54-2	8.24	9.434	1.194
040718	P54-3	8.24	8.516	.276
040718	P54-4	8.24	11.067	2.827
040718	P54-5	8.24	8.568	.328
040718	P54-6	8.24	8.882	.642
040718	P54-7	8.24	9.437	1.257
040718	P54-8	8.24	8.637	.397
040718	P55-1	8.24	9.679	1.439
040718	P55-2	8.24	9.108	.868
040718	P55-3	8.24	13.573	5.333
040718	P55-4	8.24	3.946	.706
040718	P55-5	8.24	8.049	-.191
040718	P55-6	8.24	9.034	.794
040718	P55-7	8.24	13.995	5.755
040718	P55-8	8.24	6.851	-1.389
040718	P56-1	8.24	14.487	6.247
040718	P56-2	8.24	9.060	.820
040718	P56-3	8.24	13.748	5.508
040718	P56-4	8.24	11.079	2.839
040718	P56-5	8.24	8.350	.110
040718	P56-6	8.24	11.666	3.426
040718	P56-7	8.24	11.536	3.296
040718	P56-8	8.24	8.575	.335
040718	P57-1	8.24	6.044	-2.196
040718	P57-2	8.24	9.211	.971
040718	P57-3	8.24	8.570	.330
040718	P57-4	8.24	10.339	2.099
040718	P57-5	8.24	12.349	4.109
040718	P57-6	8.24	3.840	.600
040718	P57-7	8.24	15.120	6.880
040718	P57-8	8.24	8.914	.674
040718	P58-1	8.24	7.564	-.676
040718	P58-2	8.24	9.964	1.724
040718	P58-3	8.24	9.069	.769
040718	P58-4	8.24	12.417	4.177
040718	P58-5	8.24	8.341	.101
040718	P58-6	8.24	5.760	-2.480
040718	P58-7	8.24	2.524	-5.716
040718	P53-8	8.24	11.903	3.663
040718	P59-1	8.24	32.276	24.036
040718	P59-2	8.24	31.659	23.419
040718	P59-3	8.24	12.928	4.688
040718	P59-4	8.24	24.340	16.100
040718	P59-5	8.24	23.664	15.424
040718	P59-6	8.24	5.280	-2.950
040718	P59-7	8.24	19.317	11.077
040718	P59-8	8.24	15.879	7.639
040718	P60-1	8.24	12.265	4.025
040718	P60-2	8.24	8.880	.640
040718	P60-3	8.24	10.661	2.421
040718	P60-4	8.24	13.475	5.235
040718	P60-5	8.24	14.337	6.147
040718	P60-6	8.24	12.991	4.751
040718	P60-7	8.24	8.558	.318
040718	P60-8	8.24	12.021	3.781
040718	P61-1	8.24	10.973	2.733
040718	P61-2	8.24	12.876	4.636
040718	P61-3	8.24	12.436	4.196
040718	P61-4	8.24	14.539	6.299
040718	P61-5	8.24	9.696	1.456
040718	P61-6	8.24	10.732	2.492
040718	P61-7	8.24	8.285	.025
040718	P61-8	8.24	14.425	6.255
040718	P24-1	8.24	73.839	65.599
040718	P24-2	8.24	54.524	46.284
040718	P24-3	8.24	84.404	76.164
040718	P24-4	8.24	205.829	197.589
040718	P24-5	8.24	187.975	179.735
040718	P24-6	8.24	314.134	305.894
040718	P24-7	8.24	331.417	323.177
040718	P24-8	8.24	285.654	277.414

75. TEF D

76. TRI D

77. TRI E

END OF DATA PROCESSING ROUTINE.

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040866	P1-1	10.48	15.285	4.805
040866	P1-2	10.48	13.871	3.391
040866	P1-3	10.48	18.604	8.124
040866	P1-4	10.48	16.873	6.393
040866	P1-5	10.48	14.586	4.106
040866	P1-6	10.48	17.400	6.920
040866	P1-7	10.48	18.855	8.375
040866	P1-8	10.48	15.187	4.707
040866	P2-1	10.48	21.374	10.894
040866	P2-2	10.48	15.043	4.563
040866	P2-3	10.48	15.085	4.605
040866	P2-4	10.48	19.558	9.078
040866	P2-5	10.48	21.377	10.897
040866	P2-6	10.48	14.089	3.609
040866	P2-7	10.48	19.089	8.609
040866	P2-8	10.48	19.124	8.644
040866	P3-1	10.48	15.968	5.488
040866	P3-2	10.48	18.937	8.457
040866	P3-3	10.48	18.429	7.949
040866	P3-4	10.48	17.437	6.957
040866	P3-5	10.48	21.166	10.686
040866	P3-6	10.48	17.435	6.955
040866	P3-7	10.48	18.271	7.791
040866	P3-8	10.48	18.292	7.812
040866	P4-1	10.48	20.370	9.890
040866	P4-2	10.48	18.239	7.759
040866	P4-3	10.48	63.557	53.077
040866	P4-4	10.48	24.129	13.649
040866	P4-5	10.48	16.138	5.658
040866	P4-6	10.48	19.893	9.413
040866	P4-7	10.48	20.614	10.134
040866	P4-8	10.48	19.909	9.429
040866	P5-1	10.48	11.943	1.463
040866	P5-2	10.48	14.342	3.862
040866	P5-3	10.48	16.180	5.680
040866	P5-4	10.48	11.046	.566
040866	P5-5	10.48	18.358	7.878
040866	P5-6	10.48	23.532	13.052
040866	P5-7	10.48	18.366	7.886
040866	P5-8	10.48	22.548	12.068
040866	P6-1	10.48	22.546	12.066
040866	P6-2	10.48	20.645	10.165
040866	P6-3	10.48	24.817	14.337
040866	P6-4	10.48	21.164	10.684
040866	P6-5	10.48	15.929	5.449
040866	P6-6	10.48	26.099	15.619
040866	P6-7	10.48	19.430	8.950
040866	P6-8	10.48	15.147	4.667
040866	P7-1	10.48	15.661	5.181
040866	P7-2	10.48	31.098	20.618
040866	P7-3	10.48	16.355	5.875
040866	P7-4	10.48	17.574	7.094
040866	P7-5	10.48	16.201	5.721
040866	P7-6	10.48	25.048	14.568
040866	P7-7	10.48	24.760	14.280
040866	P7-8	10.48	26.620	16.140
040866	P8-1	10.48	18.819	8.339
040866	P8-2	10.48	13.000	2.520
040866	P8-3	10.48	13.370	2.890
040866	P8-4	10.48	14.050	3.570
040866	P8-5	10.48	20.153	9.673
040866	P8-6	10.48	18.191	7.711
040866	P8-7	10.48	30.948	20.468
040866	P8-8	10.48	18.038	7.558
040866	P9-1	10.48	21.850	11.370
040866	P9-2	10.48	12.954	2.474
040866	P9-3	10.48	15.897	5.417
040866	P9-4	10.48	16.783	6.303
040866	P9-5	10.48	14.296	3.816
040866	P9-6	10.48	15.584	5.104
040866	P9-7	10.48	24.658	14.178
040866	P9-8	10.48	23.123	12.643
040866	P10-1	10.48	18.951	8.471
040866	P10-2	10.48	11.115	.635
040866	P10-3	10.48	23.817	13.337
040866	P10-4	10.48	17.543	7.063
040866	P10-5	10.48	17.402	6.922
040866	P10-6	10.48	23.849	13.369
040866	P10-7	10.48	23.354	12.874
040866	P10-8	10.48	16.577	6.097
040866	P24-1	10.48	50.484	40.004
040866	P24-2	10.48	129.504	119.024
040866	P24-3	10.48	44.128	33.648
040866	P24-4	10.48	39.454	28.974
040866	P24-5	10.48	65.636	55.156
040866	P24-6	10.48	32.353	21.873
040866	P24-7	10.48	36.740	26.260
040866	P24-8	10.48	30.961	20.481

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040867	P11-1	10.48	7.179	-3.301
040867	P11-2	10.48	7.639	-2.841
040867	P11-3	10.48	7.497	-2.983
040867	P11-4	10.48	7.671	-2.809
040867	P11-5	10.48	9.059	-1.421
040867	P11-6	10.48	9.264	-1.216
040867	P11-7	10.48	8.762	-1.718
040867	P11-8	10.48	7.655	-2.825
040867	P12-1	10.48	10.356	-.124
040867	P12-2	10.48	10.751	.271
040867	P12-3	10.48	11.053	.573
040867	P12-4	10.48	9.569	-.971
040867	P12-5	10.48	11.566	1.106
040867	P12-6	10.48	11.100	.620
040867	P12-7	10.48	13.473	2.993
040867	P12-8	10.48	12.075	1.595
040867	P13-1	10.48	12.237	1.757
040867	P13-2	10.48	13.168	2.688
040867	P13-3	10.48	13.528	3.048
040867	P13-4	10.48	10.625	.145
040867	P13-5	10.48	13.560	8.080
040867	P13-6	10.48	12.601	2.121
040867	P13-7	10.48	21.921	11.441
040867	P13-8	10.48	12.156	1.676
040867	P15-1	10.48	15.000	4.520
040867	P15-2	10.48	15.127	4.647
040867	P15-3	10.48	12.698	2.218
040867	P15-4	10.48	13.125	2.645
040867	P15-5	10.48	14.511	4.031
040867	P15-6	10.48	14.181	3.701
040867	P15-7	10.48	15.990	5.510
040867	P15-8	10.48	16.184	5.704
040867	P16-1	10.48	15.162	4.682
040867	P16-2	10.48	24.307	13.827
040867	P16-3	10.48	30.527	20.047
040867	P16-4	10.48	16.946	6.466
040867	P16-5	10.48	25.633	15.153
040867	P16-6	10.48	37.022	26.542
040867	P16-7	10.48	25.949	15.469
040867	P16-8	10.48	43.467	32.987
040867	P17-1	10.48	12.447	1.967
040867	P17-2	10.48	16.225	5.745
040867	P17-3	10.48	13.073	2.593
040867	P17-4	10.48	15.925	5.445
040867	P17-5	10.48	15.273	4.793
040867	P17-6	10.48	39.965	29.485
040867	P17-7	10.48	22.529	12.049
040867	P17-8	10.48	52.462	41.982
040867	P18-1	10.48	12.427	1.957
040867	P18-2	10.48	11.182	.702
040867	P18-3	10.48	12.543	2.063
040867	P18-4	10.48	12.018	1.538
040867	P18-5	10.48	13.041	2.561
040867	P18-6	10.48	17.054	6.574
040867	P18-7	10.48	16.368	5.888
040867	P18-8	10.48	26.899	16.419
040867	P19-1	10.48	11.814	1.334
040867	P19-2	10.48	7.125	-3.355
040867	P19-3	10.48	9.653	-.827
040867	P19-4	10.48	10.222	-.258
040867	P19-5	10.48	12.746	2.266
040867	P19-6	10.48	9.197	-1.283
040867	P19-7	10.48	11.050	.570
040867	P19-8	10.48	11.284	.804
040867	P20-1	10.48	13.352	2.872
040867	P20-2	10.48	13.268	2.788
040867	P20-3	10.48	9.646	-.834
040867	P20-4	10.48	10.853	.373
040867	P20-5	10.48	12.969	2.489
040867	P20-6	10.48	11.699	1.219
040867	P20-7	10.48	12.571	2.091
040867	P20-8	10.48	11.940	1.460
040867	P21-1	10.48	9.290	-1.190
040867	P21-2	10.48	8.208	-2.272
040867	P21-3	10.48	11.676	1.196
040867	P21-4	10.48	9.034	-1.446
040867	P21-5	10.48	12.243	1.763
040867	P21-6	10.48	11.913	1.433
040867	P21-7	10.48	13.806	3.326
040867	P21-8	10.48	10.385	-.095
040867	P24-1	10.48	52.003	41.523
040867	P24-2	10.48	123.020	112.540
040867	P24-3	10.48	40.624	30.144
040867	P24-4	10.48	36.696	26.216
040867	P24-5	10.48	64.873	54.393
040867	P24-6	10.48	36.803	26.403
040867	P24-7	10.48	33.492	23.012
040867	P24-8	10.48	27.282	16.802

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040868	P22-1	10.48	11.345	.865
040868	P22-2	10.48	9.087	-1.393
040868	P22-3	10.48	11.643	1.163
040868	P22-4	10.48	11.999	1.519
040868	P22-5	10.48	16.023	5.543
040868	P22-6	10.48	15.135	4.655
040868	P22-7	10.48	26.941	16.461
040868	P22-8	10.48	23.343	12.863
040868	P23-1	10.48	70.074	59.594
040868	P23-2	10.48	84.273	73.793
040868	P23-3	10.48	32.610	22.130
040868	P23-4	10.48	32.976	22.496
040868	P23-5	10.48	89.854	79.374
040868	P23-6	10.48	52.586	42.106
040868	P23-7	10.48	80.731	70.251
040868	P23-8	10.48	64.872	54.392
040868	P25-1	10.48	144.012	133.532
040868	P25-2	10.48	600.684	590.204
040868	P25-3	10.48	737.260	726.780
040868	P25-4	10.48	131.697	121.217
040868	P25-5	10.48	288.152	277.672
040868	P25-6	10.48	279.348	268.868
040868	P25-7	10.48	261.660	251.180
040868	P25-8	10.48	200.649	190.169
040868	P26-1	10.48	29.444	18.964
040868	P26-2	10.48	56.334	45.854
040868	P26-3	10.48	32.389	21.889
040868	P26-4	10.48	79.160	68.680
040868	P26-5	10.48	58.674	48.194
040868	P26-6	10.48	109.195	98.715
040868	P26-7	10.48	77.903	67.423
040868	P26-8	10.48	103.667	93.187
040868	P27-1	10.48	23.764	13.304
040868	P27-2	10.48	16.945	6.465
040868	P27-3	10.48	26.177	15.697
040868	P27-4	10.48	44.078	33.598
040868	P27-5	10.48	34.485	23.985
040868	P27-6	10.48	73.172	62.692
040868	P27-7	10.48	63.925	53.445
040868	P27-8	10.48	86.780	76.300
040868	P28-1	10.48	10.827	.347
040868	P28-2	10.48	10.184	-.286
040868	P28-3	10.48	11.754	1.274
040868	P28-4	10.48	13.042	2.562
040868	P28-5	10.48	13.510	3.030
040868	P28-6	10.48	17.043	6.563
040868	P28-7	10.48	14.724	4.244
040868	P28-8	10.48	22.694	12.214
040868	P29-1	10.48	14.020	3.540
040868	P29-2	10.48	14.581	4.101
040868	P29-3	10.48	14.024	3.544
040868	P29-4	10.48	14.043	3.563
040868	P29-5	10.48	13.696	3.216
040868	P29-6	10.48	11.500	1.020
040868	P29-7	10.48	13.280	2.760
040868	P29-8	10.48	13.523	3.043
040868	P30-1	10.48	14.129	3.649
040868	P30-2	10.48	11.005	.525
040868	P30-3	10.48	10.813	.333
040868	P30-4	10.48	10.629	.149
040868	P30-5	10.48	10.248	-.232
040868	P30-6	10.48	10.832	.352
040868	P30-7	10.48	12.330	1.850
040868	P30-8	10.48	11.141	.661
040868	P31-1	10.48	11.348	.868
040868	P31-2	10.48	11.219	.739
040868	P31-3	10.48	11.451	.971
040868	P31-4	10.48	11.058	.578
040868	P31-5	10.48	11.907	1.427
040868	P31-6	10.48	10.453	-.027
040868	P31-7	10.48	13.114	2.634
040868	P31-8	10.48	11.937	1.457
040868	P24-1	10.48	41.073	30.593
040868	P24-2	10.48	96.719	86.239
040868	P24-3	10.48	35.154	24.674
040868	P24-4	10.48	33.948	23.468
040868	P24-5	10.48	39.118	28.638
040868	P24-6	10.48	34.565	24.085
040868	P24-7	10.48	34.939	24.459
040868	P24-8	10.48	26.244	15.764

63. TEF D

64. SELECT CAD24

PARAMETER TABLE CAD24 LOADED.

65. READ BCD DATA ON E

TEST CONDITIONS: FLOW:215GPM INJ:0.045GPM 4% NANO3 TO P43 CASE 10

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040869	P32-1	10.48	14.416	3.936
040869	P32-2	10.48	12.022	1.542
040869	P32-3	10.48	16.708	6.228
040869	P32-4	10.48	14.936	4.456
040869	P32-5	10.48	21.317	10.837
040869	P32-6	10.48	17.785	7.305
040869	P32-7	10.48	25.322	14.842
040869	P32-8	10.48	27.196	16.716
040869	P33-1	10.48	53.263	42.723
040869	P33-2	10.48	67.185	56.705
040869	P33-3	10.48	68.569	58.089
040869	P33-4	10.48	297.706	287.226
040869	P33-5	10.48	64.769	54.289
040869	P33-6	10.48	63.887	53.407
040869	P33-7	10.48	91.711	81.231
040869	P33-8	10.48	70.319	59.839
040869	P34-1	10.48	2954.324	2943.844
040869	P34-2	10.48	399.020	388.540
040869	P34-3	10.48	138.099	127.619
040869	P34-4	10.48	875.454	865.014
040869	P34-5	10.48	225.544	215.064
040869	P34-6	10.48	195.345	184.865
040869	P34-7	10.48	346.358	335.878
040869	P34-8	10.48	121.675	111.195
040869	P35-1	10.48	18.918	8.438
040869	P35-2	10.48	812.520	802.040
040869	P35-3	10.48	669.678	659.198
040869	P35-4	10.48	221.916	211.436
040869	P35-5	10.48	194.853	184.373
040869	P35-6	10.48	358.388	347.908
040869	P35-7	10.48	329.743	319.263
040869	P35-8	10.48	232.180	221.700
040869	P36-1	10.48	521.239	510.759
040869	P36-2	10.48	235.340	224.860
040869	P36-3	10.48	273.862	263.382
040869	P36-4	10.48	624.587	614.107
040869	P36-5	10.48	309.488	299.008
040869	P36-6	10.48	337.678	327.198
040869	P36-7	10.48	242.862	232.382
040869	P36-8	10.48	300.093	289.613
040869	P37-1	10.48	25.478	14.998
040869	P37-2	10.48	19.674	9.194
040869	P37-3	10.48	100.566	90.086
040869	P37-4	10.48	114.065	103.585
040869	P37-5	10.48	213.012	202.532
040869	P37-6	10.48	180.709	170.229
040869	P37-7	10.48	177.278	166.798
040869	P37-8	10.48	190.198	179.718
040869	P38-1	10.48	15.831	5.351
040869	P38-2	10.48	17.987	7.507
040869	P38-3	10.48	13.611	3.131
040869	P38-4	10.48	24.803	14.323
040869	P38-5	10.48	17.187	6.707
040869	P38-6	10.48	36.278	25.798
040869	P38-7	10.48	49.094	38.614
040869	P38-8	10.48	89.397	78.917
040869	P40-1	10.48	6.140	-4.340
040869	P40-2	10.48	3.592	-6.888
040869	P40-3	10.48	1.638	-8.842
040869	P40-4	10.48	2.709	-7.771
040869	P40-5	10.48	15.784	5.304
040869	P40-6	10.48	5.714	-4.716
040869	P40-7	10.48	16.900	6.420
040869	P40-8	10.48	7.133	-3.347
040869	P41-1	10.48	18.199	7.719
040869	P41-2	10.48	14.534	4.054
040869	P41-3	10.48	18.508	8.028
040869	P41-4	10.48	17.160	6.680
040869	P41-5	10.48	28.343	17.863
040869	P41-6	10.48	24.454	13.974
040869	P41-7	10.48	45.761	35.281
040869	P41-8	10.48	59.973	49.493
040869	P42-1	10.48	38.020	27.540
040869	P42-2	10.48	45.573	35.093
040869	P42-3	10.48	57.884	47.404
040869	P42-4	10.48	74.324	63.844
040869	P42-5	10.48	276.430	265.950
040869	P42-6	10.48	230.772	220.292
040869	P42-7	10.48	131.028	120.548
040869	P42-8	10.48	163.620	153.140
040869	P24-1	10.48	47.322	36.842
040869	P24-2	10.48	81.949	71.469
040869	P24-3	10.48	35.536	25.056
040869	P24-4	10.48	28.897	18.417
040869	P24-5	10.48	52.111	41.631
040869	P24-6	10.48	31.657	21.177
040869	P24-7	10.48	31.187	20.707
040869	P24-8	10.48	23.976	13.496

TEST CONDITIONS: FLOW:215GPM INJ:0.045GPM 4% NANO3 TO P43 CASE 10

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040870	P44-1	10.48	66.625	56.145
040870	P44-2	10.48	130.560	120.080
040870	P44-3	10.48	259.288	248.808
040870	P44-4	10.48	550.477	539.997
040870	P44-5	10.48	617.283	606.803
040870	P44-6	10.48	265.091	254.611
040870	P44-7	10.48	294.645	284.165
040870	P44-8	10.48	270.377	259.897
040870	P45-1	10.48	67.458	56.978
040870	P45-2	10.48	41.373	30.893
040870	P45-3	10.48	277.597	267.117
040870	P45-4	10.48	200.735	190.255
040870	P45-5	10.48	248.549	238.069
040870	P45-6	10.48	180.086	169.606
040870	P45-7	10.48	219.986	209.506
040870	P45-8	10.48	173.455	162.975
040870	P46-1	10.48	27.504	17.024
040870	P46-2	10.48	23.571	13.091
040870	P46-3	10.48	17.584	7.104
040870	P46-4	10.48	21.442	10.962
040870	P46-5	10.48	25.458	14.978
040870	P46-6	10.48	32.649	22.169
040870	P46-7	10.48	67.527	57.047
040870	P46-8	10.48	32.431	21.951
040870	P47-1	10.48	11.178	.698
040870	P47-2	10.48	11.843	1.363
040870	P47-3	10.48	11.785	1.305
040870	P47-4	10.48	11.811	1.331
040870	P47-5	10.48	14.311	3.831
040870	P47-6	10.48	13.686	3.206
040870	P47-7	10.48	25.841	15.361
040870	P47-8	10.48	19.039	8.559
040870	P48-1	10.48	20.266	9.786
040870	P48-2	10.48	20.754	10.274
040870	P48-3	10.48	22.712	12.232
040870	P48-4	10.48	22.045	11.565
040870	P48-5	10.48	28.474	17.994
040870	P48-6	10.48	30.036	19.556
040870	P48-7	10.48	52.576	42.096
040870	P48-8	10.48	89.145	78.665
040870	P49-1	10.48	40.308	29.828
040870	P49-2	10.48	53.445	42.965
040870	P49-3	10.48	101.603	91.123
040870	P49-4	10.48	210.125	199.645
040870	P49-5	10.48	68.583	78.103
040870	P49-6	10.48	120.173	109.693
040870	P49-7	10.48	119.565	109.085
040870	P49-8	10.48	143.803	133.323
040870	P50-1	10.48	54.861	44.381
040870	P50-2	10.48	67.292	56.812
040870	P50-3	10.48	195.154	184.674
040870	P50-4	10.48	146.166	135.686
040870	P50-5	10.48	231.843	221.363
040870	P50-6	10.48	156.183	145.703
040870	P50-7	10.48	229.454	218.974
040870	P50-8	10.48	128.568	118.108
040870	P51-1	10.48	39.456	28.976
040870	P51-2	10.48	41.669	31.189
040870	P51-3	10.48	106.722	96.242
040870	P51-4	10.48	55.317	44.837
040870	P51-5	10.48	172.724	162.244
040870	P51-6	10.48	124.523	114.043
040870	P51-7	10.48	173.300	162.820
040870	P51-8	10.48	160.069	149.589
040870	P52-1	10.48	17.628	7.148
040870	P52-2	10.48	23.835	13.355
040870	P52-3	10.48	14.751	4.271
040870	P52-4	10.48	18.436	7.956
040870	P52-5	10.48	26.613	16.133
040870	P52-6	10.48	41.514	31.034
040870	P52-7	10.48	67.739	57.259
040870	P52-8	10.48	77.657	67.177
040870	P53-1	10.48	10.680	.200
040870	P53-2	10.48	11.170	.690
040870	P53-3	10.48	11.122	.642
040870	P53-4	10.48	10.192	-.288
040870	P53-5	10.48	12.836	2.356
040870	P53-6	10.48	12.976	2.496
040870	P53-7	10.48	18.208	7.728
040870	P53-8	10.48	15.403	4.923
040870	P24-1	10.48	48.063	37.583
040870	P24-2	10.48	105.166	94.686
040870	P24-3	10.48	36.912	26.432
040870	P24-4	10.48	33.834	23.354
040870	P24-5	10.48	52.118	41.638
040870	P24-6	10.48	31.880	21.400
040870	P24-7	10.48	32.363	21.883
040870	P24-8	10.48	25.742	15.262

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040871	P54-1	10.48	14.048	3.568
040871	P54-2	10.48	14.487	4.007
040871	P54-3	10.48	13.973	3.493
040871	P54-4	10.48	18.240	7.760
040871	P54-5	10.48	17.933	7.453
040871	P54-6	10.48	18.589	8.109
040871	P54-7	10.48	36.139	25.659
040871	P54-8	10.48	38.902	28.422
040871	P55-1	10.48	20.748	10.268
040871	P55-2	10.48	22.362	11.882
040871	P55-3	10.48	26.142	15.662
040871	P55-4	10.48	23.964	13.484
040871	P55-5	10.48	54.914	44.434
040871	P55-6	10.48	43.965	33.515
040871	P55-7	10.48	77.446	66.966
040871	P55-8	10.48	55.489	45.009
040871	P56-1	10.48	26.657	16.177
040871	P56-2	10.48	23.869	13.389
040871	P56-3	10.48	30.235	19.755
040871	P56-4	10.48	22.732	12.252
040871	P56-5	10.48	99.087	88.607
040871	P56-6	10.48	69.972	59.492
040871	P56-7	10.48	148.791	138.311
040871	P56-8	10.48	30.042	19.562
040871	P57-1	10.48	13.235	2.755
040871	P57-2	10.48	14.531	4.051
040871	P57-3	10.48	16.057	5.577
040871	P57-4	10.48	18.373	7.893
040871	P57-5	10.48	22.420	11.940
040871	P57-6	10.48	25.836	15.356
040871	P57-7	10.48	57.432	46.952
040871	P57-8	10.48	47.279	36.799
040871	P58-1	10.48	11.376	.896
040871	P58-2	10.48	13.343	2.863
040871	P58-3	10.48	11.561	1.081
040871	P58-4	10.48	15.167	4.687
040871	P58-5	10.48	11.403	.923
040871	P58-6	10.48	12.647	2.167
040871	P58-7	10.48	11.305	.825
040871	P58-8	10.48	16.283	5.803
040871	P59-1	10.48	15.014	4.534
040871	P59-2	10.48	12.742	2.262
040871	P59-3	10.48	17.296	6.816
040871	P59-4	10.48	16.642	6.162
040871	P59-5	10.48	14.299	3.819
040871	P59-6	10.48	16.786	6.306
040871	P59-7	10.48	23.401	12.921
040871	P59-8	10.48	21.288	10.808
040871	P60-1	10.48	15.316	4.836
040871	P60-2	10.48	12.212	1.732
040871	P60-3	10.48	14.155	3.675
040871	P60-4	10.48	17.925	7.445
040871	P60-5	10.48	15.645	5.165
040871	P60-6	10.48	16.780	6.300
040871	P60-7	10.48	24.373	13.893
040871	P60-8	10.48	20.380	9.900
040871	P61-1	10.48	16.262	5.782
040871	P61-2	10.48	14.643	4.163
040871	P61-3	10.48	13.323	2.843
040871	P61-4	10.48	18.760	8.280
040871	P61-5	10.48	15.141	4.661
040871	P61-6	10.48	15.724	5.244
040871	P61-7	10.48	24.460	13.980
040871	P61-8	10.48	29.331	18.851
040871	P24-1	10.48	55.924	45.444
040871	P24-2	10.48	103.204	92.724
040871	P24-3	10.48	41.299	30.819
040871	P24-4	10.48	36.886	26.406
040871	P24-5	10.48	61.051	50.571
040871	P24-6	10.48	34.846	24.366
040871	P24-7	10.48	32.884	22.404
040871	P24-8	10.48	27.934	17.454

72. TEF D

73. SELECT CAD21

PARAMETER TABLE CAD21 LOADED.

74. READ BCD DATA ON E

TEST CONDITIONS: FLOW:215GPM INJ:0.09GPM 4% NANO3 TO P43 CASE 11

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040872	P1-1	10.34	16.358	6.028
040872	P1-2	10.34	11.469	1.129
040872	P1-3	10.34	20.476	10.136
040872	P1-4	10.34	12.605	2.265
040872	P1-5	10.34	13.492	3.152
040872	P1-6	10.34	14.779	4.439
040872	P1-7	10.34	14.635	4.295
040872	P1-8	10.34	14.000	3.660
040872	P2-1	10.34	18.528	8.188
040872	P2-2	10.34	10.488	.148
040872	P2-3	10.34	11.887	1.547
040872	P2-4	10.34	12.196	1.856
040872	P2-5	10.34	21.085	10.745
040872	P2-6	10.34	11.342	1.002
040872	P2-7	10.34	16.523	6.183
040872	P2-8	10.34	16.699	6.359
040872	P3-1	10.34	11.031	.691
040872	P3-2	10.34	17.885	7.545
040872	P3-3	10.34	15.585	5.245
040872	P3-4	10.34	16.326	5.986
040872	P3-5	10.34	20.910	10.570
040872	P3-6	10.34	14.003	3.663
040872	P3-7	10.34	17.033	6.693
040872	P3-8	10.34	17.563	7.223
040872	P4-1	10.34	28.588	18.248
040872	P4-2	10.34	15.399	5.059
040872	P4-3	10.34	43.665	33.325
040872	P4-4	10.34	25.831	15.491
040872	P4-5	10.34	10.579	.239
040872	P4-6	10.34	17.629	7.289
040872	P4-7	10.34	14.726	4.386
040872	P4-8	10.34	19.658	9.318
040872	P5-1	10.34	18.513	8.173
040872	P5-2	10.34	14.446	4.106
040872	P5-3	10.34	16.410	6.140
040872	P5-4	10.34	16.832	6.492
040872	P5-5	10.34	17.770	7.430
040872	P5-6	10.34	25.728	15.388
040872	P5-7	10.34	28.812	18.472
040872	P5-8	10.34	24.605	14.265
040872	P6-1	10.34	17.553	7.213
040872	P6-2	10.34	14.367	4.027
040872	P6-3	10.34	20.040	9.700
040872	P6-4	10.34	14.198	3.858
040872	P6-5	10.34	12.428	2.088
040872	P6-6	10.34	24.085	13.665
040872	P6-7	10.34	17.236	6.896
040872	P6-8	10.34	17.203	6.863
040872	P7-1	10.34	11.734	1.394
040872	P7-2	10.34	16.187	5.847
040872	P7-3	10.34	9.237	-1.103
040872	P7-4	10.34	14.244	3.904
040872	P7-5	10.34	9.051	-1.289
040872	P7-6	10.34	24.445	14.105
040872	P7-7	10.34	25.629	15.289
040872	P7-8	10.34	30.800	20.460
040872	P8-1	10.34	11.657	1.317
040872	P8-2	10.34	6.874	-3.466
040872	P8-3	10.34	10.152	-.188
040872	P8-4	10.34	7.662	-2.673
040872	P8-5	10.34	18.012	7.672
040872	P8-6	10.34	12.571	2.231
040872	P8-7	10.34	36.936	26.596
040872	P8-8	10.34	16.265	5.925
040872	P9-1	10.34	18.026	7.686
040872	P9-2	10.34	9.888	-.452
040872	P9-3	10.34	9.988	-.352
040872	P9-4	10.34	16.908	6.568
040872	P9-5	10.34	6.635	-3.705
040872	P9-6	10.34	11.503	1.163
040872	P9-7	10.34	23.106	12.766
040872	P9-8	10.34	14.968	4.608
040872	P10-1	10.34	14.449	4.109
040872	P10-2	10.34	9.041	-1.299
040872	P10-3	10.34	17.453	7.113
040872	P10-4	10.34	13.226	2.886
040872	P10-5	10.34	15.072	4.732
040872	P10-6	10.34	18.753	8.413
040872	P10-7	10.34	16.854	6.514
040872	P10-8	10.34	14.055	3.715
040872	P24-1	10.34	89.087	78.747
040872	P24-2	10.34	190.251	179.911
040872	P24-3	10.34	67.167	56.827
040872	P24-4	10.34	61.149	50.859
040872	P24-5	10.34	111.120	100.780
040872	P24-6	10.34	45.904	35.564
040872	P24-7	10.34	57.727	47.387
040872	P24-8	10.34	48.213	37.873

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040873	P11-1	10.34	6.603	-3.737
040873	P11-2	10.34	6.117	-4.223
040873	P11-3	10.34	6.530	-3.810
040873	P11-4	10.34	6.341	-3.999
040873	P11-5	10.34	7.456	-2.884
040873	P11-6	10.34	7.942	-2.398
040873	P11-7	10.34	6.204	-4.136
040873	P11-8	10.34	5.424	-4.916
040873	P12-1	10.34	10.902	.562
040873	P12-2	10.34	11.308	.968
040873	P12-3	10.34	11.561	1.221
040873	P12-4	10.34	8.948	-1.392
040873	P12-5	10.34	12.773	2.433
040873	P12-6	10.34	11.191	.851
040873	P12-7	10.34	14.233	3.893
040873	P12-8	10.34	13.058	2.718
040873	P13-1	10.34	13.242	2.902
040873	P13-2	10.34	15.049	4.709
040873	P13-3	10.34	13.270	2.930
040873	P13-4	10.34	11.117	.777
040873	P13-5	10.34	23.908	13.568
040873	P13-6	10.34	14.858	4.518
040873	P13-7	10.34	29.601	19.261
040873	P13-8	10.34	13.276	2.936
040873	P15-1	10.34	20.579	10.239
040873	P15-2	10.34	17.644	7.304
040873	P15-3	10.34	14.814	4.474
040873	P15-4	10.34	14.928	4.588
040873	P15-5	10.34	17.311	6.971
040873	P15-6	10.34	17.374	7.034
040873	P15-7	10.34	21.700	11.360
040873	P15-8	10.34	19.836	9.496
040873	P16-1	10.34	19.094	8.754
040873	P16-2	10.34	33.917	23.577
040873	P16-3	10.34	36.848	26.508
040873	P16-4	10.34	21.872	11.532
040873	P16-5	10.34	34.320	23.980
040873	P16-6	10.34	63.182	52.762
040873	P16-7	10.34	35.537	25.197
040873	P16-8	10.34	74.347	64.007
040873	P17-1	10.34	19.186	8.846
040873	P17-2	10.34	24.943	14.603
040873	P17-3	10.34	17.525	7.185
040873	P17-4	10.34	23.696	13.356
040873	P17-5	10.34	23.336	12.996
040873	P17-6	10.34	70.279	59.939
040873	P17-7	10.34	35.693	25.353
040873	P17-8	10.34	95.859	85.519
040873	P18-1	10.34	12.715	2.375
040873	P18-2	10.34	11.902	1.642
040873	P18-3	10.34	15.003	4.663
040873	P18-4	10.34	14.135	3.795
040873	P18-5	10.34	14.530	4.190
040873	P18-6	10.34	23.892	13.552
040873	P18-7	10.34	21.082	10.742
040873	P18-8	10.34	42.031	31.691
040873	P19-1	10.34	10.586	.246
040873	P19-2	10.34	6.546	-3.794
040873	P19-3	10.34	9.903	-.437
040873	P19-4	10.34	9.356	-.984
040873	P19-5	10.34	12.848	2.508
040873	P19-6	10.34	8.721	-1.619
040873	P19-7	10.34	10.857	.517
040873	P19-8	10.34	10.675	.335
040873	P20-1	10.34	14.721	4.381
040873	P20-2	10.34	12.913	2.573
040873	P20-3	10.34	9.632	-.708
040873	P20-4	10.34	11.771	1.431
040873	P20-5	10.34	13.379	3.039
040873	P20-6	10.34	12.430	2.090
040873	P20-7	10.34	12.564	2.224
040873	P20-8	10.34	12.432	2.092
040873	P21-1	10.34	8.672	-1.668
040873	P21-2	10.34	7.556	-2.784
040873	P21-3	10.34	12.092	1.752
040873	P21-4	10.34	8.652	-1.688
040873	P21-5	10.34	12.618	2.278
040873	P21-6	10.34	12.007	1.667
040873	P21-7	10.34	15.114	4.774
040873	P21-8	10.34	11.166	.826
040873	P24-1	10.34	92.822	82.482
040873	P24-2	10.34	206.482	196.142
040873	P24-3	10.34	65.754	56.414
040873	P24-4	10.34	59.602	49.262
040873	P24-5	10.34	105.222	94.882
040873	P24-6	10.34	59.210	48.870
040873	P24-7	10.34	54.421	44.081
040873	P24-8	10.34	43.565	33.225

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040874	P22-1	10.34	9.817	-5.523
040874	P22-2	10.34	8.223	-2.117
040874	P22-3	10.34	11.665	1.325
040874	P22-4	10.34	13.301	2.961
040874	P22-5	10.34	18.415	8.075
040874	P22-6	10.34	15.649	5.309
040874	P22-7	10.34	39.165	28.825
040874	P22-8	10.34	34.218	23.878
040874	P23-1	10.34	102.510	92.170
040874	P23-2	10.34	136.047	125.707
040874	P23-3	10.34	50.045	39.705
040874	P23-4	10.34	46.037	35.697
040874	P23-5	10.34	161.066	150.726
040874	P23-6	10.34	88.974	78.634
040874	P23-7	10.34	147.005	136.665
040874	P23-8	10.34	117.492	107.152
040874	P25-1	10.34	231.876	221.536
040874	P25-2	10.34	1152.728	1142.388
040874	P25-3	10.34	1469.647	1459.307
040874	P25-4	10.34	231.261	220.941
040874	P25-5	10.34	539.459	529.149
040874	P25-6	10.34	531.832	521.492
040874	P25-7	10.34	493.018	482.678
040874	P25-8	10.34	372.270	361.930
040874	P26-1	10.34	45.532	35.192
040874	P26-2	10.34	88.107	77.767
040874	P26-3	10.34	52.284	41.944
040874	P26-4	10.34	138.880	128.540
040874	P26-5	10.34	103.083	92.743
040874	P26-6	10.34	206.662	196.322
040874	P26-7	10.34	136.198	125.858
040874	P26-8	10.34	190.650	180.310
040874	P27-1	10.34	33.506	23.166
040874	P27-2	10.34	23.467	13.127
040874	P27-3	10.34	37.437	27.097
040874	P27-4	10.34	73.731	63.391
040874	P27-5	10.34	56.624	46.284
040874	P27-6	10.34	132.189	121.849
040874	P27-7	10.34	113.094	102.754
040874	P27-8	10.34	158.939	148.599

040874	P28-1	10.34	8.029	-2.311
040874	P28-2	10.34	8.492	-1.858
040874	P28-3	10.34	11.386	1.046
040874	P28-4	10.34	11.380	1.040
040874	P28-5	10.34	12.441	2.101
040874	P28-6	10.34	19.184	8.844
040874	P28-7	10.34	16.734	6.394
040874	P28-8	10.34	31.897	21.557
040874	P29-1	10.34	10.639	.299
040874	P29-2	10.34	12.921	2.581
040874	P29-3	10.34	11.758	1.448
040874	P29-4	10.34	13.254	2.914
040874	P29-5	10.34	13.189	2.849
040874	P29-6	10.34	9.498	-.842
040874	P29-7	10.34	13.371	3.031
040874	P29-8	10.34	13.149	2.859
040874	P30-1	10.34	13.527	3.187
040874	P30-2	10.34	9.676	-.664
040874	P30-3	10.34	9.239	-1.101
040874	P30-4	10.34	9.592	-.748
040874	P30-5	10.34	8.955	-1.385
040874	P30-6	10.34	9.174	-1.166
040874	P30-7	10.34	10.833	.493
040874	P30-8	10.34	9.781	-.559
040874	P31-1	10.34	10.121	-.219
040874	P31-2	10.34	9.615	-.725
040874	P31-3	10.34	10.638	.298
040874	P31-4	10.34	9.876	-.464
040874	P31-5	10.34	10.865	.545
040874	P31-6	10.34	9.558	-.782
040874	P31-7	10.34	12.836	2.496
040874	P31-8	10.34	11.534	1.194
040874	P24-1	10.34	77.862	67.542
040874	P24-2	10.34	187.249	176.909
040874	P24-3	10.34	57.670	47.330
040874	P24-4	10.34	55.651	45.311
040874	P24-5	10.34	63.770	53.430
040874	P24-6	10.34	54.620	44.280
040874	P24-7	10.34	54.383	44.043
040874	P24-8	10.34	39.116	28.776

81. TEF D

82. SELECT CAD24

PARAMETER TABLE CAD24 LOADED.

83. READ BCD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040875	P32-1	10.34	16.091	5.751
040875	P32-2	10.34	15.488	5.148
040875	P32-3	10.34	17.640	7.300
040875	P32-4	10.34	15.726	5.386
040875	P32-5	10.34	28.075	17.735
040875	P32-6	10.34	20.813	10.473
040875	P32-7	10.34	36.238	25.898
040875	P32-8	10.34	35.007	24.667
040875	P33-1	10.34	63.449	53.109
040875	P33-2	10.34	74.465	64.145
040875	P33-3	10.34	80.556	70.216
040875	P33-4	10.34	248.164	237.824
040875	P33-5	10.34	106.794	96.454
040875	P33-6	10.34	97.677	87.337
040875	P33-7	10.34	152.023	141.683
040875	P33-8	10.34	126.362	116.022
040875	P34-1	10.34	.000	-10.340
040875	P34-2	10.34	515.576	505.236
040875	P34-3	10.34	201.374	191.034
040875	P34-4	10.34	1495.546	1485.206
040875	P34-5	10.34	357.058	346.718
040875	P34-6	10.34	326.321	315.981
040875	P34-7	10.34	577.567	567.247
040875	P34-8	10.34	318.643	308.343
040875	P35-1	10.34	21.737	11.397
040875	P35-2	10.34	1413.108	1402.768
040875	P35-3	10.34	1182.682	1172.342
040875	P35-4	10.34	419.148	408.848
040875	P35-5	10.34	335.820	325.480
040875	P35-6	10.34	651.533	641.193
040875	P35-7	10.34	571.945	561.605
040875	P35-8	10.34	421.950	411.610
040875	P36-1	10.34	1018.765	1008.425
040875	P36-2	10.34	436.228	425.888
040875	P36-3	10.34	509.041	498.701
040875	P36-4	10.34	1196.988	1186.648
040875	P36-5	10.34	589.389	579.049
040875	P36-6	10.34	635.748	625.408
040875	P36-7	10.34	457.555	447.215
040875	P36-8	10.34	563.408	553.068
040875	P37-1	10.34	44.814	34.474
040875	P37-2	10.34	30.259	19.919
040875	P37-3	10.34	196.368	186.028
040875	P37-4	10.34	217.335	206.995
040875	P37-5	10.34	429.497	419.157
040875	P37-6	10.34	344.320	333.980
040875	P37-7	10.34	344.571	334.231
040875	P37-8	10.34	365.896	355.556
040875	P38-1	10.34	18.859	8.519
040875	P38-2	10.34	24.361	14.021
040875	P38-3	10.34	16.339	5.999
040875	P38-4	10.34	37.842	27.542
040875	P38-5	10.34	23.070	12.730
040875	P38-6	10.34	63.064	52.754
040875	P38-7	10.34	86.398	76.058
040875	P38-8	10.34	168.625	158.285
040875	P40-1	10.34	2.168	-8.172
040875	P40-2	10.34	2.353	-7.987
040875	P40-3	10.34	2.353	-7.987
040875	P40-4	10.34	2.353	-7.987
040875	P40-5	10.34	16.589	6.249
040875	P40-6	10.34	3.505	-6.835
040875	P40-7	10.34	23.478	13.138
040875	P40-8	10.34	4.587	-5.753
040875	P41-1	10.34	26.534	16.194
040875	P41-2	10.34	16.947	6.607
040875	P41-3	10.34	24.653	14.313
040875	P41-4	10.34	23.625	13.285
040875	P41-5	10.34	41.947	31.647
040875	P41-6	10.34	38.464	28.124
040875	P41-7	10.34	76.426	66.086
040875	P41-8	10.34	105.414	95.074
040875	P42-1	10.34	63.656	53.316
040875	P42-2	10.34	69.129	58.789
040875	P42-3	10.34	96.579	86.239
040875	P42-4	10.34	124.713	114.373
040875	P42-5	10.34	531.924	521.584
040875	P42-6	10.34	440.015	429.675
040875	P42-7	10.34	247.963	237.623
040875	P42-8	10.34	311.223	300.884
040875	P24-1	10.34	93.520	88.180
040875	P24-2	10.34	136.749	126.409
040875	P24-3	10.34	56.543	46.203
040875	P24-4	10.34	47.928	37.588
040875	P24-5	10.34	91.646	81.346
040875	P24-6	10.34	49.647	39.347
040875	P24-7	10.34	51.374	41.034
040875	P24-8	10.34	37.626	27.286

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040876	P44-1	10.34	104.160	93.820
040876	P44-2	10.34	221.266	210.926
040876	P44-3	10.34	465.171	454.831
040876	P44-4	10.34	989.778	979.438
040876	P44-5	10.34	1191.954	1181.614
040876	P44-6	10.34	471.730	461.390
040876	P44-7	10.34	552.852	542.512
040876	P44-8	10.34	509.679	499.339
040876	P45-1	10.34	112.159	101.819
040876	P45-2	10.34	69.585	58.245
040876	P45-3	10.34	535.061	524.721
040876	P45-4	10.34	377.040	366.700
040876	P45-5	10.34	474.037	463.697
040876	P45-6	10.34	336.300	325.960
040876	P45-7	10.34	418.689	408.349
040876	P45-8	10.34	329.896	318.556
040876	P46-1	10.34	41.484	31.144
040876	P46-2	10.34	34.552	24.212
040876	P46-3	10.34	21.875	11.535
040876	P46-4	10.34	31.302	20.962
040876	P46-5	10.34	38.328	27.988
040876	P46-6	10.34	52.922	42.582
040876	P46-7	10.34	123.142	112.802
040876	P46-8	10.34	69.924	59.644
040876	P47-1	10.34	10.566	.216
040876	P47-2	10.34	11.838	1.498
040876	P47-3	10.34	10.459	.119
040876	P47-4	10.34	12.364	2.024
040876	P47-5	10.34	16.923	6.583
040876	P47-6	10.34	14.209	3.869
040876	P47-7	10.34	38.902	28.562
040876	P47-8	10.34	27.167	16.827
040876	P48-1	10.34	28.366	18.026
040876	P48-2	10.34	28.768	18.428
040876	P48-3	10.34	31.651	21.311
040876	P48-4	10.34	29.334	18.994
040876	P48-5	10.34	42.366	32.026
040876	P48-6	10.34	47.950	37.610
040876	P48-7	10.34	90.673	80.333
040876	P48-8	10.34	163.589	153.229
040876	P49-1	10.34	65.502	55.162
040876	P49-2	10.34	86.188	75.848
040876	P49-3	10.34	181.198	170.858
040876	P49-4	10.34	405.974	395.634
040876	P49-5	10.34	164.403	154.063
040876	P49-6	10.34	216.032	205.692
040876	P49-7	10.34	223.504	213.164
040876	P49-8	10.34	279.831	260.491
040876	P50-1	10.34	90.207	79.867
040876	P50-2	10.34	108.985	98.645
040876	P50-3	10.34	334.802	324.462
040876	P50-4	10.34	262.681	252.341
040876	P50-5	10.34	434.486	424.146
040876	P50-6	10.34	284.742	274.402
040876	P50-7	10.34	435.679	425.339
040876	P50-8	10.34	235.006	224.666
040876	P51-1	10.34	61.886	51.546
040876	P51-2	10.34	65.510	55.170
040876	P51-3	10.34	189.645	179.305
040876	P51-4	10.34	92.182	81.842
040876	P51-5	10.34	319.187	308.847
040876	P51-6	10.34	221.240	210.900
040876	P51-7	10.34	326.680	316.340
040876	P51-8	10.34	293.366	288.026
040876	P52-1	10.34	19.642	9.302
040876	P52-2	10.34	33.700	23.360
040876	P52-3	10.34	14.887	4.547
040876	P52-4	10.34	23.777	13.437
040876	P52-5	10.34	39.300	28.960
040876	P52-6	10.34	69.318	58.978
040876	P52-7	10.34	121.312	110.972
040876	P52-8	10.34	139.208	128.868
040876	P53-1	10.34	10.176	-.164
040876	P53-2	10.34	11.196	.856
040876	P53-3	10.34	10.267	-.073
040876	P53-4	10.34	10.037	-.303
040876	P53-5	10.34	11.474	1.134
040876	P53-6	10.34	12.536	2.196
040876	P53-7	10.34	22.371	12.031
040876	P53-8	10.34	18.085	7.745
040876	P24-1	10.34	81.879	71.539
040876	P24-2	10.34	187.576	177.236
040876	P24-3	10.34	58.108	47.768
040876	P24-4	10.34	53.710	43.370
040876	P24-5	10.34	101.215	90.875
040876	P24-6	10.34	51.620	41.280
040876	P24-7	10.34	54.013	43.673
040876	P24-8	10.34	39.551	29.211

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040877	P54-1	10.34	15.526	5.186
040877	P54-2	10.34	16.289	5.929
040877	P54-3	10.34	16.297	5.957
040877	P54-4	10.34	22.847	12.547
040877	P54-5	10.34	27.786	17.446
040877	P54-6	10.34	27.355	17.015
040877	P54-7	10.34	60.356	50.016
040877	P54-8	10.34	62.631	52.291
040877	P55-1	10.34	27.046	16.706
040877	P55-2	10.34	31.571	21.231
040877	P55-3	10.34	35.829	25.489
040877	P55-4	10.34	31.594	21.254
040877	P55-5	10.34	90.817	80.477
040877	P55-6	10.34	73.233	62.893
040877	P55-7	10.34	136.558	126.218
040877	P55-8	10.34	96.833	86.493
040877	P56-1	10.34	37.247	26.907
040877	P56-2	10.34	33.687	23.347
040877	P56-3	10.34	45.213	34.873
040877	P56-4	10.34	32.269	21.929
040877	P56-5	10.34	180.514	170.174
040877	P56-6	10.34	112.638	102.298
040877	P56-7	10.34	275.864	265.524
040877	P56-8	10.34	50.942	40.602
040877	P57-1	10.34	15.357	5.017
040877	P57-2	10.34	16.315	5.975
040877	P57-3	10.34	17.069	6.729
040877	P57-4	10.34	22.797	12.457
040877	P57-5	10.34	29.786	19.446
040877	P57-6	10.34	39.131	28.791
040877	P57-7	10.34	92.588	82.248
040877	P57-8	10.34	84.348	74.008
040877	P58-1	10.34	10.795	.455
040877	P58-2	10.34	13.187	2.847
040877	P58-3	10.34	11.389	1.049
040877	P58-4	10.34	14.728	4.388
040877	P58-5	10.34	11.071	.731
040877	P58-6	10.34	12.660	2.320
040877	P58-7	10.34	12.001	1.661
040877	P58-8	10.34	17.377	7.037
040877	P59-1	10.34	20.253	9.913
040877	P59-2	10.34	13.751	3.411
040877	P59-3	10.34	21.941	11.601
040877	P59-4	10.34	15.426	5.086
040877	P59-5	10.34	15.395	5.055
040877	P59-6	10.34	17.649	7.309
040877	P59-7	10.34	30.976	20.536
040877	P59-8	10.34	27.848	17.508
040877	P60-1	10.34	16.045	5.705
040877	P60-2	10.34	12.965	2.625
040877	P60-3	10.34	14.338	3.998
040877	P60-4	10.34	18.823	8.483
040877	P60-5	10.34	14.684	4.344
040877	P60-6	10.34	17.625	7.285
040877	P60-7	10.34	31.727	21.387
040877	P60-8	10.34	26.179	15.839
040877	P61-1	10.34	16.867	6.527
040877	P61-2	10.34	13.510	3.170
040877	P61-3	10.34	12.467	2.127
040877	P61-4	10.34	16.333	5.993
040877	P61-5	10.34	16.372	6.032
040877	P61-6	10.34	16.137	5.797
040877	P61-7	10.34	34.247	23.907
040877	P61-8	10.34	36.552	26.212
040877	P24-1	10.34	101.271	90.931
040877	P24-2	10.34	157.564	147.224
040877	P24-3	10.34	64.408	54.068
040877	P24-4	10.34	63.063	52.723
040877	P24-5	10.34	101.495	91.155
040877	P24-6	10.34	54.992	44.652
040877	P24-7	10.34	55.400	45.060
040877	P24-8	10.34	43.500	33.160

90. TEF D

91. TRI D

92. TRI E

END OF DATA PROCESSING ROUTINE.

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040809	P1-1	10.31	15.605	5.295
040809	P1-2	10.31	14.182	3.872
040809	P1-3	10.31	23.326	13.016
040809	P1-4	10.31	11.654	1.344
040809	P1-5	10.31	17.454	7.144
040809	P1-6	10.31	15.097	4.787
040809	P1-7	10.31	21.055	10.745
040809	P1-8	10.31	9.392	-9.918
040809	P2-1	10.31	13.800	3.490
040809	P2-2	10.31	14.741	4.431
040809	P2-3	10.31	12.103	1.793
040809	P2-4	10.31	17.371	7.061
040809	P2-5	10.31	20.466	10.156
040809	P2-6	10.31	16.124	5.814
040809	P2-7	10.31	18.280	7.970
040809	P2-8	10.31	9.161	-1.149
040809	P3-1	10.31	25.450	15.140
040809	P3-2	10.31	31.373	21.063
040809	P3-3	10.31	24.177	13.867
040809	P3-4	10.31	21.143	10.833
040809	P3-5	10.31	66.130	55.820
040809	P3-6	10.31	26.544	16.234
040809	P3-7	10.31	39.222	28.912
040809	P3-8	10.31	19.331	9.021
040809	P4-1	10.31	1754.374	1744.064
040809	P4-2	10.31	1044.755	1034.445
040809	P4-3	10.31	499.541	489.231
040809	P4-4	10.31	561.993	551.683
040809	P4-5	10.31	318.030	307.720
040809	P4-6	10.31	294.984	284.674
040809	P4-7	10.31	405.888	395.578
040809	P4-8	10.31	166.336	156.026
040809	P5-1	10.31	867.173	856.863
040809	P5-2	10.31	395.864	385.554
040809	P5-3	10.31	409.136	398.826
040809	P5-4	10.31	631.812	621.502
040809	P5-5	10.31	483.681	473.371
040809	P5-6	10.31	365.702	355.392
040809	P5-7	10.31	222.278	211.968
040809	P5-8	10.31	218.446	208.136
040809	P6-1	10.31	62.325	52.015
040809	P6-2	10.31	73.862	63.552
040809	P6-3	10.31	251.930	241.620
040809	P6-4	10.31	668.511	658.201
040809	P6-5	10.31	514.765	504.455
040809	P6-6	10.31	347.067	336.757
040809	P6-7	10.31	340.553	330.243
040809	P6-8	10.31	207.439	197.129
040809	P7-1	10.31	54.216	43.906
040809	P7-2	10.31	70.089	59.779
040809	P7-3	10.31	161.975	151.665
040809	P7-4	10.31	67.938	57.628
040809	P7-5	10.31	177.205	166.895
040809	P7-6	10.31	161.408	151.098
040809	P7-7	10.31	172.399	162.089
040809	P7-8	10.31	156.318	146.008
040809	P8-1	10.31	21.855	11.545
040809	P8-2	10.31	30.317	20.007
040809	P8-3	10.31	54.670	44.360
040809	P8-4	10.31	30.329	20.019
040809	P8-5	10.31	70.902	60.592
040809	P8-6	10.31	50.746	40.436
040809	P8-7	10.31	138.297	127.987
040809	P8-8	10.31	111.879	101.569
040809	P9-1	10.31	50.043	39.733
040809	P9-2	10.31	16.439	6.129
040809	P9-3	10.31	10.596	.286
040809	P9-4	10.31	25.635	15.325
040809	P9-5	10.31	37.520	27.210
040809	P9-6	10.31	26.509	16.199
040809	P9-7	10.31	126.815	116.505
040809	P9-8	10.31	78.156	67.846
040809	P10-1	10.31	12.197	1.887
040809	P10-2	10.31	4.300	-6.010
040809	P10-3	10.31	8.591	-1.719
040809	P10-4	10.31	12.779	2.469
040809	P10-5	10.31	10.910	.600
040809	P10-6	10.31	9.845	-.465
040809	P10-7	10.31	22.015	11.705
040809	P10-8	10.31	11.062	.752
040809	P24-1	10.31	40.628	30.318
040809	P24-2	10.31	50.666	40.356
040809	P24-3	10.31	80.011	69.701
040809	P24-4	10.31	264.037	253.727
040809	P24-5	10.31	225.441	215.131
040809	P24-6	10.31	177.460	167.150
040809	P24-7	10.31	220.324	210.514
040809	P24-8	10.31	207.645	197.335

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040810	P11-1	10.31	7.972	-2.338
040810	P11-2	10.31	9.359	-.951
040810	P11-3	10.31	8.524	-1.786
040810	P11-4	10.31	9.300	-1.010
040810	P11-5	10.31	10.477	.167
040810	P11-6	10.31	10.597	.287
040810	P11-7	10.31	11.591	1.281
040810	P11-8	10.31	11.927	1.617
040810	P12-1	10.31	10.311	.001
040810	P12-2	10.31	14.519	4.209
040810	P12-3	10.31	14.854	4.544
040810	P12-4	10.31	12.993	2.683
040810	P12-5	10.31	14.872	4.562
040810	P12-6	10.31	18.977	8.667
040810	P12-7	10.31	27.557	17.247
040810	P12-8	10.31	27.041	16.731
040810	P13-1	10.31	96.982	86.672
040810	P13-2	10.31	106.263	95.953
040810	P13-3	10.31	338.448	328.138
040810	P13-4	10.31	176.643	166.333
040810	P13-5	10.31	111.967	101.657
040810	P13-6	10.31	103.040	92.730
040810	P13-7	10.31	112.296	101.986
040810	P13-8	10.31	32.543	22.233
040810	P15-1	10.31	71.791	61.481
040810	P15-2	10.31	62.699	52.389
040810	P15-3	10.31	169.834	159.524
040810	P15-4	10.31	412.762	402.452
040810	P15-5	10.31	279.069	268.759
040810	P15-6	10.31	349.885	339.575
040810	P15-7	10.31	265.802	255.492
040810	P15-8	10.31	228.180	217.870
040810	P16-1	10.31	51.206	40.896
040810	P16-2	10.31	50.444	40.134
040810	P16-3	10.31	175.944	165.634
040810	P16-4	10.31	52.826	42.516
040810	P16-5	10.31	237.972	227.662
040810	P16-6	10.31	104.465	94.155
040810	P16-7	10.31	206.011	195.701
040810	P16-8	10.31	181.937	171.627
040810	P17-1	10.31	41.130	30.820
040810	P17-2	10.31	15.656	5.346
040810	P17-3	10.31	33.575	23.265
040810	P17-4	10.31	29.489	19.179
040810	P17-5	10.31	110.048	99.738
040810	P17-6	10.31	30.282	19.972
040810	P17-7	10.31	157.824	147.514
040810	P17-8	10.31	94.172	83.862
040810	P18-1	10.31	16.808	6.498
040810	P18-2	10.31	17.379	7.069
040810	P18-3	10.31	18.783	8.473
040810	P18-4	10.31	20.202	9.892
040810	P18-5	10.31	25.463	15.153
040810	P18-6	10.31	18.935	8.625
040810	P18-7	10.31	99.776	89.466
040810	P18-8	10.31	55.264	44.954
040810	P19-1	10.31	14.576	4.266
040810	P19-2	10.31	14.682	4.372
040810	P19-3	10.31	12.092	1.782
040810	P19-4	10.31	12.910	2.600
040810	P19-5	10.31	14.989	4.679
040810	P19-6	10.31	12.605	2.295
040810	P19-7	10.31	49.495	39.185
040810	P19-8	10.31	50.162	39.852
040810	P20-1	10.31	11.599	1.289
040810	P20-2	10.31	12.787	2.477
040810	P20-3	10.31	9.628	-.682
040810	P20-4	10.31	10.843	.533
040810	P20-5	10.31	12.103	1.793
040810	P20-6	10.31	12.519	2.209
040810	P20-7	10.31	9.630	-.680
040810	P20-8	10.31	10.966	.656
040810	P21-1	10.31	8.742	-1.568
040810	P21-2	10.31	9.478	-.832
040810	P21-3	10.31	10.002	-.308
040810	P21-4	10.31	7.529	-2.781
040810	P21-5	10.31	11.218	.908
040810	P21-6	10.31	11.317	1.007
040810	P21-7	10.31	13.538	3.228
040810	P21-8	10.31	11.644	1.334
040810	P24-1	10.31	41.527	31.217
040810	P24-2	10.31	53.163	42.853
040810	P24-3	10.31	75.077	64.767
040810	P24-4	10.31	237.587	227.277
040810	P24-5	10.31	206.529	196.219
040810	P24-6	10.31	208.893	198.583
040810	P24-7	10.31	206.267	195.977
040810	P24-8	10.31	209.230	198.920

TEST CONDITIONS: FLOW:615GPM INJ:0.135GPM 4% NAN03 TO P14 CASE 13

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040811	P22-1	10.31	15.237	4.927
040811	P22-2	10.31	15.206	4.896
040811	P22-3	10.31	26.955	16.645
040811	P22-4	10.31	29.411	19.101
040811	P22-5	10.31	27.856	17.546
040811	P22-6	10.31	27.520	17.210
040811	P22-7	10.31	36.841	26.531
040811	P22-8	10.31	35.279	24.969
040811	P23-1	10.31	56.743	46.433
040811	P23-2	10.31	39.735	29.425
040811	P23-3	10.31	133.259	122.949
040811	P23-4	10.31	165.733	155.423
040811	P23-5	10.31	79.599	69.289
040811	P23-6	10.31	102.341	92.031
040811	P23-7	10.31	106.977	96.667
040811	P23-8	10.31	122.615	112.305
040811	P25-1	10.31	14.505	4.195
040811	P25-2	10.31	12.722	2.412
040811	P25-3	10.31	16.844	6.534
040811	P25-4	10.31	13.553	3.243
040811	P25-5	10.31	18.185	7.875
040811	P25-6	10.31	18.763	8.453
040811	P25-7	10.31	38.888	28.578
040811	P25-8	10.31	100.722	90.412
040811	P26-1	10.31	20.160	9.850
040811	P26-2	10.31	18.399	8.089
040811	P26-3	10.31	25.044	14.734
040811	P26-4	10.31	23.265	12.955
040811	P26-5	10.31	43.636	33.326
040811	P26-6	10.31	37.861	27.551
040811	P26-7	10.31	109.749	99.439
040811	P26-8	10.31	95.398	85.088
040811	P27-1	10.31	16.457	6.147
040811	P27-2	10.31	12.766	2.456
040811	P27-3	10.31	16.473	6.163
040811	P27-4	10.31	16.588	6.278
040811	P27-5	10.31	15.622	5.312
040811	P27-6	10.31	16.691	6.381
040811	P27-7	10.31	56.657	46.347
040811	P27-8	10.31	29.016	18.706
040811	P28-1	10.31	11.271	.961
040811	P28-2	10.31	11.029	.719
040811	P28-3	10.31	10.350	.040
040811	P28-4	10.31	12.502	2.192
040811	P28-5	10.31	12.299	1.989
040811	P28-6	10.31	14.638	4.328
040811	P28-7	10.31	26.429	16.119
040811	P28-8	10.31	17.146	6.836
040811	P29-1	10.31	15.875	5.565
040811	P29-2	10.31	14.550	4.240
040811	P29-3	10.31	12.206	1.896
040811	P29-4	10.31	14.154	3.844
040811	P29-5	10.31	13.196	2.886
040811	P29-6	10.31	10.623	.313
040811	P29-7	10.31	18.093	7.783
040811	P29-8	10.31	16.154	5.844
040811	P30-1	10.31	11.872	1.562
040811	P30-2	10.31	9.818	-.492
040811	P30-3	10.31	8.669	-1.641
040811	P30-4	10.31	8.910	-1.400
040811	P30-5	10.31	7.512	-2.798
040811	P30-6	10.31	8.600	-1.710
040811	P30-7	10.31	11.272	.962
040811	P30-8	10.31	9.863	-.447
040811	P31-1	10.31	10.723	.413
040811	P31-2	10.31	11.140	.830
040811	P31-3	10.31	10.651	.341
040811	P31-4	10.31	10.311	.001
040811	P31-5	10.31	10.637	.327
040811	P31-6	10.31	9.400	-.910
040811	P31-7	10.31	13.233	2.923
040811	P31-8	10.31	13.132	2.822
040811	P24-1	10.31	49.988	39.678
040811	P24-2	10.31	67.965	57.655
040811	P24-3	10.31	81.912	71.602
040811	P24-4	10.31	253.969	243.659
040811	P24-5	10.31	137.537	127.227
040811	P24-6	10.31	224.857	214.547
040811	P24-7	10.31	220.716	210.406
040811	P24-8	10.31	210.835	200.525

36. TEF D

37. SELECT CAD24

PARAMETER TABLE CAD24 LOADED.

38. READ BCD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040812	P32-1	10.31	9.960	-.350
040812	P32-2	10.31	9.907	-.403
040812	P32-3	10.31	9.656	-.654
040812	P32-4	10.31	9.846	-.464
040812	P32-5	10.31	12.319	2.009
040812	P32-6	10.31	11.245	.935
040812	P32-7	10.31	12.808	2.498
040812	P32-8	10.31	15.541	5.231
040812	P33-1	10.31	16.215	5.905
040812	P33-2	10.31	15.672	5.362
040812	P33-3	10.31	14.922	4.612
040812	P33-4	10.31	13.885	3.575
040812	P33-5	10.31	25.681	15.371
040812	P33-6	10.31	24.548	14.238
040812	P33-7	10.31	27.194	16.884
040812	P33-8	10.31	29.939	19.629
040812	P34-1	10.31	12.558	2.248
040812	P34-2	10.31	11.497	1.187
040812	P34-3	10.31	9.515	-.795
040812	P34-4	10.31	10.465	.155
040812	P34-5	10.31	11.664	1.354
040812	P34-6	10.31	11.104	.794
040812	P34-7	10.31	19.669	9.359
040812	P34-8	10.31	14.999	4.689
040812	P35-1	10.31	13.273	2.963
040812	P35-2	10.31	10.435	.125
040812	P35-3	10.31	12.511	2.201
040812	P35-4	10.31	13.425	3.115
040812	P35-5	10.31	13.796	3.486
040812	P35-6	10.31	15.296	4.986
040812	P35-7	10.31	22.672	12.362
040812	P35-8	10.31	57.054	46.744
040812	P36-1	10.31	15.040	4.730
040812	P36-2	10.31	13.683	3.373
040812	P36-3	10.31	14.833	4.523
040812	P36-4	10.31	14.727	4.417
040812	P36-5	10.31	22.885	12.575
040812	P36-6	10.31	16.975	6.665
040812	P36-7	10.31	65.792	55.482
040812	P36-8	10.31	26.059	15.749
040812	P37-1	10.31	10.964	.654
040812	P37-2	10.31	9.896	-.414
040812	P37-3	10.31	13.601	3.291
040812	P37-4	10.31	9.415	-.895
040812	P37-5	10.31	12.718	2.408
040812	P37-6	10.31	14.731	4.421
040812	P37-7	10.31	38.860	28.550
040812	P37-8	10.31	30.308	19.998
040812	P38-1	10.31	12.622	2.312
040812	P38-2	10.31	10.738	.428
040812	P38-3	10.31	10.232	-.078
040812	P38-4	10.31	10.961	.651
040812	P38-5	10.31	10.456	.146
040812	P38-6	10.31	11.744	1.434
040812	P38-7	10.31	11.213	.903
040812	P38-8	10.31	12.886	2.576
040812	P40-1	10.31	10.338	.028
040812	P40-2	10.31	8.346	-1.964
040812	P40-3	10.31	8.990	-1.320
040812	P40-4	10.31	7.901	-2.409
040812	P40-5	10.31	14.587	4.277
040812	P40-6	10.31	11.255	.945
040812	P40-7	10.31	13.826	3.516
040812	P40-8	10.31	11.233	.923
040812	P41-1	10.31	11.304	.994
040812	P41-2	10.31	10.189	-.121
040812	P41-3	10.31	10.253	-.057
040812	P41-4	10.31	10.147	-.163
040812	P41-5	10.31	13.943	3.633
040812	P41-6	10.31	11.256	.946
040812	P41-7	10.31	13.357	3.047
040812	P41-8	10.31	15.283	4.973
040812	P42-1	10.31	8.694	-1.616
040812	P42-2	10.31	8.052	-2.258
040812	P42-3	10.31	10.882	.572
040812	P42-4	10.31	10.692	.382
040812	P42-5	10.31	9.287	-1.023
040812	P42-6	10.31	11.407	1.097
040812	P42-7	10.31	8.911	-1.399
040812	P42-8	10.31	17.365	7.055
040812	P24-1	10.31	52.321	42.011
040812	P24-2	10.31	49.960	39.650
040812	P24-3	10.31	81.042	70.732
040812	P24-4	10.31	246.653	236.343
040812	P24-5	10.31	212.777	202.467
040812	P24-6	10.31	227.938	217.628
040812	P24-7	10.31	217.635	207.325
040812	P24-8	10.31	212.204	201.894

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040813	P44-1	10.31	32.224	21.914
040813	P44-2	10.31	12.026	1.716
040813	P44-3	10.31	12.210	1.900
040813	P44-4	10.31	10.453	.143
040813	P44-5	10.31	11.796	1.486
040813	P44-6	10.31	10.348	.038
040813	P44-7	10.31	13.713	3.403
040813	P44-8	10.31	21.226	10.916
040813	P45-1	10.31	9.980	-.330
040813	P45-2	10.31	9.316	-.994
040813	P45-3	10.31	11.669	1.359
040813	P45-4	10.31	11.570	1.260
040813	P45-5	10.31	11.219	.909
040813	P45-6	10.31	11.711	1.401
040813	P45-7	10.31	16.428	6.118
040813	P45-8	10.31	13.748	3.438
040813	P46-1	10.31	10.469	.159
040813	P46-2	10.31	9.668	-.642
040813	P46-3	10.31	9.964	-.346
040813	P46-4	10.31	10.483	.173
040813	P46-5	10.31	10.269	-.041
040813	P46-6	10.31	10.079	-.231
040813	P46-7	10.31	10.476	.166
040813	P46-8	10.31	9.931	-.379
040813	P47-1	10.31	8.903	-1.407
040813	P47-2	10.31	9.885	-.425
040813	P47-3	10.31	8.441	-1.869
040813	P47-4	10.31	9.479	-.831
040813	P47-5	10.31	10.001	-.309
040813	P47-6	10.31	10.196	-.114
040813	P47-7	10.31	9.864	-.446
040813	P47-8	10.31	10.230	-.080
040813	P48-1	10.31	8.455	-1.855
040813	P48-2	10.31	9.741	-.569
040813	P48-3	10.31	10.013	-.297
040813	P48-4	10.31	10.209	-.101
040813	P48-5	10.31	11.905	1.595
040813	P48-6	10.31	9.169	-1.141
040813	P48-7	10.31	9.646	-.664
040813	P48-8	10.31	11.110	.800
040813	P49-1	10.31	9.161	-1.149
040813	P49-2	10.31	11.000	.690
040813	P49-3	10.31	9.642	-.668
040813	P49-4	10.31	9.443	-.867
040813	P49-5	10.31	10.000	-.310
040813	P49-6	10.31	8.418	-1.892
040813	P49-7	10.31	9.734	-.576
040813	P49-8	10.31	12.023	1.713
040813	P50-1	10.31	9.493	-.817
040813	P50-2	10.31	10.352	.042
040813	P50-3	10.31	10.475	.165
040813	P50-4	10.31	9.695	-.615
040813	P50-5	10.31	9.967	-.343
040813	P50-6	10.31	10.286	-.024
040813	P50-7	10.31	10.038	-.272
040813	P50-8	10.31	9.873	-.437
040813	P51-1	10.31	10.786	.476
040813	P51-2	10.31	11.188	.878
040813	P51-3	10.31	10.952	.642
040813	P51-4	10.31	9.829	-.481
040813	P51-5	10.31	10.154	-.156
040813	P51-6	10.31	11.344	1.034
040813	P51-7	10.31	11.256	.946
040813	P51-8	10.31	10.975	.665
040813	P52-1	10.31	9.509	-.801
040813	P52-2	10.31	9.404	-.906
040813	P52-3	10.31	10.880	.570
040813	P52-4	10.31	9.736	-.574
040813	P52-5	10.31	8.667	-1.643
040813	P52-6	10.31	9.923	-.387
040813	P52-7	10.31	10.139	-.171
040813	P52-8	10.31	10.380	.070
040813	P53-1	10.31	8.738	-1.572
040813	P53-2	10.31	8.748	-1.562
040813	P53-3	10.31	8.680	-1.630
040813	P53-4	10.31	8.578	-1.732
040813	P53-5	10.31	9.347	-.963
040813	P53-6	10.31	8.639	-1.671
040813	P53-7	10.31	9.787	-.523
040813	P53-8	10.31	8.055	-2.255
040813	P24-1	10.31	45.383	35.073
040813	P24-2	10.31	57.178	46.868
040813	P24-3	10.31	86.078	75.768
040813	P24-4	10.31	274.723	264.413
040813	P24-5	10.31	231.117	220.807
040813	P24-6	10.31	219.240	208.930
040813	P24-7	10.31	220.862	210.552
040813	P24-8	10.31	215.177	204.867

TEST CONDITIONS: FLOW:615GPM INJ:0.135GPM 4% NANO3 TO P14 CASE 13

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040814	P54-1	10.31	11.694	1.384
040814	P54-2	10.31	11.674	1.364
040814	P54-3	10.31	10.662	.352
040814	P54-4	10.31	12.614	2.304
040814	P54-5	10.31	12.006	1.696
040814	P54-6	10.31	12.469	2.159
040814	P54-7	10.31	10.511	.201
040814	P54-8	10.31	15.378	5.068
040814	P55-1	10.31	11.039	.729
040814	P55-2	10.31	13.188	2.878
040814	P55-3	10.31	14.746	4.436
040814	P55-4	10.31	12.957	2.647
040814	P55-5	10.31	10.479	.169
040814	P55-6	10.31	12.360	2.050
040814	P55-7	10.31	13.528	3.218
040814	P55-8	10.31	12.498	2.188
040814	P56-1	10.31	15.750	5.440
040814	P56-2	10.31	11.186	.876
040814	P56-3	10.31	11.598	1.288
040814	P56-4	10.31	11.825	1.515
040814	P56-5	10.31	11.409	1.099
040814	P56-6	10.31	13.032	2.722
040814	P56-7	10.31	13.658	3.348
040814	P56-8	10.31	12.279	1.969
040814	P57-1	10.31	10.438	.128
040814	P57-2	10.31	11.171	.861
040814	P57-3	10.31	11.249	.939
040814	P57-4	10.31	12.603	2.293
040814	P57-5	10.31	12.072	1.762
040814	P57-6	10.31	11.850	1.540
040814	P57-7	10.31	14.455	4.145
040814	P57-8	10.31	10.319	.009
040814	P58-1	10.31	10.749	.439
040814	P58-2	10.31	11.947	1.637
040814	P58-3	10.31	10.973	.663
040814	P58-4	10.31	13.392	3.082
040814	P58-5	10.31	9.687	-.623
040814	P58-6	10.31	10.827	.517
040814	P58-7	10.31	8.744	-1.566
040814	P58-8	10.31	13.513	3.203
040814	P59-1	10.31	16.361	6.051
040814	P59-2	10.31	18.508	8.198
040814	P59-3	10.31	12.903	2.593
040814	P59-4	10.31	17.797	7.487
040814	P59-5	10.31	15.441	5.131
040814	P59-6	10.31	11.869	1.559
040814	P59-7	10.31	14.199	3.889
040814	P59-8	10.31	15.643	5.333
040814	P60-1	10.31	12.184	1.874
040814	P60-2	10.31	11.013	.703
040814	P60-3	10.31	13.829	3.519
040814	P60-4	10.31	14.450	4.140
040814	P60-5	10.31	13.600	3.290
040814	P60-6	10.31	14.623	4.313
040814	P60-7	10.31	12.972	2.662
040814	P60-8	10.31	13.790	3.480
040814	P61-1	10.31	13.949	3.639
040814	P61-2	10.31	13.514	3.204
040814	P61-3	10.31	12.938	2.628
040814	P61-4	10.31	16.682	6.372
040814	P61-5	10.31	14.267	3.957
040814	P61-6	10.31	13.966	3.656
040814	P61-7	10.31	12.993	2.683
040814	P61-8	10.31	17.954	7.644
040814	P24-1	10.31	51.457	41.147
040814	P24-2	10.31	52.158	41.848
040814	P24-3	10.31	87.180	76.870
040814	P24-4	10.31	286.301	275.991
040814	P24-5	10.31	218.615	208.305
040814	P24-6	10.31	214.860	204.550
040814	P24-7	10.31	203.717	193.407
040814	P24-8	10.31	212.389	202.079

45. TEF D

46. SELECT CAD21

PARAMETER TABLE CAD21 LOADED.

47. READ BCD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040822	P1-1	10.27	13.850	3.580
040822	P1-2	10.27	11.808	1.538
040822	P1-3	10.27	27.118	16.848
040822	P1-4	10.27	11.341	1.071
040822	P1-5	10.27	11.688	1.418
040822	P1-6	10.27	10.589	.319
040822	P1-7	10.27	13.363	3.093
040822	P1-8	10.27	8.007	-2.263
040822	P2-1	10.27	13.404	3.134
040822	P2-2	10.27	16.672	6.402
040822	P2-3	10.27	12.308	2.038
040822	P2-4	10.27	17.230	6.960
040822	P2-5	10.27	18.525	8.255
040822	P2-6	10.27	11.143	.873
040822	P2-7	10.27	12.598	2.328
040822	P2-8	10.27	5.007	-5.263
040822	P3-1	10.27	9.876	-.394
040822	P3-2	10.27	15.320	5.050
040822	P3-3	10.27	10.792	.522
040822	P3-4	10.27	11.587	1.317
040822	P3-5	10.27	15.487	5.217
040822	P3-6	10.27	9.118	-1.152
040822	P3-7	10.27	12.389	2.119
040822	P3-8	10.27	11.868	1.598
040822	P4-1	10.27	11.961	1.691
040822	P4-2	10.27	7.186	-3.084
040822	P4-3	10.27	19.387	9.117
040822	P4-4	10.27	12.232	1.962
040822	P4-5	10.27	9.273	-.997
040822	P4-6	10.27	15.593	5.323
040822	P4-7	10.27	11.689	1.419
040822	P4-8	10.27	19.520	9.250
040822	P5-1	10.27	3.650	-6.620
040822	P5-2	10.27	8.070	-2.200
040822	P5-3	10.27	9.739	-.531
040822	P5-4	10.27	8.795	-1.475
040822	P5-5	10.27	13.429	3.159
040822	P5-6	10.27	18.280	8.010
040822	P5-7	10.27	17.465	7.195
040822	P5-8	10.27	11.205	.935
040822	P6-1	10.27	10.442	.172
040822	P6-2	10.27	10.343	.073
040822	P6-3	10.27	14.801	4.531
040822	P6-4	10.27	7.641	-2.629
040822	P6-5	10.27	12.234	1.964
040822	P6-6	10.27	15.833	5.563
040822	P6-7	10.27	13.999	3.729
040822	P6-8	10.27	10.917	.647
040822	P7-1	10.27	13.567	3.297
040822	P7-2	10.27	30.884	20.614
040822	P7-3	10.27	14.450	4.180
040822	P7-4	10.27	12.616	2.346
040822	P7-5	10.27	16.167	5.897
040822	P7-6	10.27	14.211	3.941
040822	P7-7	10.27	20.498	10.228
040822	P7-8	10.27	25.402	15.132
040822	P8-1	10.27	10.831	.561
040822	P8-2	10.27	15.609	5.339
040822	P8-3	10.27	13.052	2.782
040822	P8-4	10.27	9.755	-.515
040822	P8-5	10.27	15.991	5.721
040822	P8-6	10.27	18.882	8.612
040822	P8-7	10.27	16.046	5.776
040822	P8-8	10.27	17.920	7.650
040822	P9-1	10.27	15.905	5.635
040822	P9-2	10.27	4.389	-5.881
040822	P9-3	10.27	5.550	-4.720
040822	P9-4	10.27	11.777	1.507
040822	P9-5	10.27	7.935	-2.335
040822	P9-6	10.27	7.685	-2.585
040822	P9-7	10.27	5.464	-4.806
040822	P9-8	10.27	5.401	-4.869
040822	P10-1	10.27	14.195	3.925
040822	P10-2	10.27	7.334	-2.936
040822	P10-3	10.27	6.062	-4.208
040822	P10-4	10.27	12.601	2.331
040822	P10-5	10.27	14.070	3.800
040822	P10-6	10.27	10.523	.253
040822	P10-7	10.27	14.828	4.558
040822	P10-8	10.27	13.407	3.137
040822	P24-1	10.27	56.352	46.082
040822	P24-2	10.27	122.215	111.945
040822	P24-3	10.27	45.738	35.468
040822	P24-4	10.27	37.138	26.868
040822	P24-5	10.27	88.733	78.463
040822	P24-6	10.27	30.915	20.645
040822	P24-7	10.27	35.993	25.723
040822	P24-8	10.27	30.849	20.579

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040823	P11-1	10.27	9.468	-.802
040823	P11-2	10.27	10.070	-.200
040823	P11-3	10.27	8.500	-1.770
040823	P11-4	10.27	9.015	-1.255
040823	P11-5	10.27	11.642	1.372
040823	P11-6	10.27	10.022	-.248
040823	P11-7	10.27	9.816	-.454
040823	P11-8	10.27	9.243	-1.027
040823	P12-1	10.27	11.734	1.464
040823	P12-2	10.27	12.129	1.859
040823	P12-3	10.27	12.014	1.744
040823	P12-4	10.27	10.407	.137
040823	P12-5	10.27	14.779	4.509
040823	P12-6	10.27	12.617	2.347
040823	P12-7	10.27	14.854	4.584
040823	P12-8	10.27	14.100	3.830
040823	P13-1	10.27	13.571	3.301
040823	P13-2	10.27	14.682	4.412
040823	P13-3	10.27	14.415	4.145
040823	P13-4	10.27	12.446	2.176
040823	P13-5	10.27	19.809	9.539
040823	P13-6	10.27	14.479	4.209
040823	P13-7	10.27	23.533	13.263
040823	P13-8	10.27	13.150	2.880
040823	P15-1	10.27	16.783	6.513
040823	P15-2	10.27	15.435	5.165
040823	P15-3	10.27	15.261	4.991
040823	P15-4	10.27	14.440	4.170
040823	P15-5	10.27	15.530	5.260
040823	P15-6	10.27	16.125	5.855
040823	P15-7	10.27	19.140	8.870
040823	P15-8	10.27	18.916	8.646
040823	P16-1	10.27	16.461	6.191
040823	P16-2	10.27	48.548	38.278
040823	P16-3	10.27	35.188	24.918
040823	P16-4	10.27	20.897	10.627
040823	P16-5	10.27	34.503	24.233
040823	P16-6	10.27	44.415	34.145
040823	P16-7	10.27	28.747	18.477
040823	P16-8	10.27	47.299	37.029
040823	P17-1	10.27	18.309	8.039
040823	P17-2	10.27	12.099	1.829
040823	P17-3	10.27	16.711	6.441
040823	P17-4	10.27	19.480	9.210
040823	P17-5	10.27	17.941	7.671
040823	P17-6	10.27	39.062	28.792
040823	P17-7	10.27	26.075	15.805
040823	P17-8	10.27	58.880	48.610
040823	P18-1	10.27	14.501	4.231
040823	P18-2	10.27	14.352	4.082
040823	P18-3	10.27	14.665	4.395
040823	P18-4	10.27	16.349	6.079
040823	P18-5	10.27	15.057	4.787
040823	P18-6	10.27	20.620	10.350
040823	P18-7	10.27	19.529	9.259
040823	P18-8	10.27	28.267	17.997
040823	P19-1	10.27	12.901	2.631
040823	P19-2	10.27	10.067	-.203
040823	P19-3	10.27	11.145	.875
040823	P19-4	10.27	11.853	1.583
040823	P19-5	10.27	13.283	3.013
040823	P19-6	10.27	11.611	1.341
040823	P19-7	10.27	12.194	1.924
040823	P19-8	10.27	12.264	1.994
040823	P20-1	10.27	15.472	5.202
040823	P20-2	10.27	13.977	3.707
040823	P20-3	10.27	11.465	1.195
040823	P20-4	10.27	12.323	2.053
040823	P20-5	10.27	14.188	3.918
040823	P20-6	10.27	14.449	4.179
040823	P20-7	10.27	15.795	5.525
040823	P20-8	10.27	14.082	3.812
040823	P21-1	10.27	11.400	1.130
040823	P21-2	10.27	10.935	.665
040823	P21-3	10.27	13.743	3.473
040823	P21-4	10.27	12.286	2.016
040823	P21-5	10.27	12.158	1.888
040823	P21-6	10.27	15.770	5.500
040823	P21-7	10.27	16.120	5.850
040823	P21-8	10.27	12.966	2.696
040823	P24-1	10.27	60.310	50.040
040823	P24-2	10.27	138.585	128.315
040823	P24-3	10.27	43.656	33.386
040823	P24-4	10.27	38.114	27.844
040823	P24-5	10.27	84.696	74.426
040823	P24-6	10.27	39.435	29.165
040823	P24-7	10.27	35.245	24.975
040823	P24-8	10.27	30.677	20.407

TEST ID	PIV-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040817	P22-1	10.27	7.049	-3.221
040817	P22-2	10.27	6.012	-4.258
040817	P22-3	10.27	9.298	-.972
040817	P22-4	10.27	8.269	-2.001
040817	P22-5	10.27	11.327	1.057
040817	P22-6	10.27	11.086	.816
040817	P22-7	10.27	20.989	10.719
040817	P22-8	10.27	18.990	8.720
040817	P23-1	10.27	74.506	64.236
040817	P23-2	10.27	77.977	67.707
040817	P23-3	10.27	29.994	19.724
040817	P23-4	10.27	28.727	18.457
040817	P23-5	10.27	87.729	77.459
040817	P23-6	10.27	52.950	42.680
040817	P23-7	10.27	81.667	71.397
040817	P23-8	10.27	58.546	48.276
040817	P25-1	10.27	157.067	146.797
040817	P25-2	10.27	680.762	670.492
040817	P25-3	10.27	857.356	847.086
040817	P25-4	10.27	153.733	143.463
040817	P25-5	10.27	333.290	323.020
040817	P25-6	10.27	298.017	287.747
040817	P25-7	10.27	292.258	281.988
040817	P25-8	10.27	210.485	200.215
040817	P26-1	10.27	25.591	15.321
040817	P26-2	10.27	42.723	32.453
040817	P26-3	10.27	28.105	17.835
040817	P26-4	10.27	65.224	54.954
040817	P26-5	10.27	54.213	43.943
040817	P26-6	10.27	110.256	99.986
040817	P26-7	10.27	74.666	64.396
040817	P26-8	10.27	100.303	90.033
040817	P27-1	10.27	16.398	6.128
040817	P27-2	10.27	14.435	4.165
040817	P27-3	10.27	19.283	9.013
040817	P27-4	10.27	34.750	24.480
040817	P27-5	10.27	26.295	16.025
040817	P27-6	10.27	59.208	48.938
040817	P27-7	10.27	56.968	46.698
040817	P27-8	10.27	78.817	68.547
040817	P28-1	10.27	10.897	.627
040817	P28-2	10.27	3.820	-6.450
040817	P28-3	10.27	7.671	-2.599
040817	P28-4	10.27	6.153	-4.117
040817	P28-5	10.27	8.475	-1.795
040817	P28-6	10.27	10.386	.116
040817	P28-7	10.27	9.850	-.420
040817	P28-8	10.27	17.593	7.323
040817	P29-1	10.27	6.364	-3.906
040817	P29-2	10.27	9.776	-.494
040817	P29-3	10.27	7.024	-3.246
040817	P29-4	10.27	8.921	-1.349
040817	P29-5	10.27	9.813	-.457
040817	P29-6	10.27	7.894	-2.376
040817	P29-7	10.27	9.685	-.585
040817	P29-8	10.27	9.299	-.971
040817	P30-1	10.27	8.102	-2.168
040817	P30-2	10.27	7.545	-2.725
040817	P30-3	10.27	6.205	-4.065
040817	P30-4	10.27	6.774	-3.496
040817	P30-5	10.27	5.142	-5.128
040817	P30-6	10.27	5.422	-4.848
040817	P30-7	10.27	7.961	-2.309
040817	P30-8	10.27	7.135	-3.135
040817	P31-1	10.27	8.587	-1.683
040817	P31-2	10.27	8.187	-2.083
040817	P31-3	10.27	8.879	-1.391
040817	P31-4	10.27	7.597	-2.673
040817	P31-5	10.27	8.627	-1.643
040817	P31-6	10.27	6.699	-3.571
040817	P31-7	10.27	9.839	-.431
040817	P31-8	10.27	7.453	-2.817
040817	P24-1	10.27	49.099	38.829
040817	P24-2	10.27	129.259	118.989
040817	P24-3	10.27	36.396	26.126
040817	P24-4	10.27	32.380	22.110
040817	P24-5	10.27	51.668	41.398
040817	P24-6	10.27	38.244	27.974
040817	P24-7	10.27	32.617	22.347
040817	P24-8	10.27	25.160	14.890

54. TEF D

55. SELECT CAD24

PARAMETER TABLE CAD24 LOADED.

56. READ BCD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040818	P32-1	10.27	14.629	4.359
040818	P32-2	10.27	14.069	3.799
040818	P32-3	10.27	15.828	5.558
040818	P32-4	10.27	14.950	4.680
040818	P32-5	10.27	22.972	12.702
040818	P32-6	10.27	19.128	8.858
040818	P32-7	10.27	24.447	14.177
040818	P32-8	10.27	27.048	16.778
040818	P33-1	10.27	30.826	20.556
040818	P33-2	10.27	43.898	33.628
040818	P33-3	10.27	42.424	32.154
040818	P33-4	10.27	29.403	19.133
040818	P33-5	10.27	60.094	49.824
040818	P33-6	10.27	57.125	46.855
040818	P33-7	10.27	85.632	75.362
040818	P33-8	10.27	73.438	63.168
040818	P34-1	10.27	2958.172	2947.902
040818	P34-2	10.27	527.790	517.520
040818	P34-3	10.27	159.143	148.873
040818	P34-4	10.27	812.458	802.188
040818	P34-5	10.27	231.339	221.069
040818	P34-6	10.27	198.520	188.250
040818	P34-7	10.27	373.460	363.190
040818	P34-8	10.27	131.367	121.097
040818	P35-1	10.27	29.403	19.133
040818	P35-2	10.27	829.770	819.500
040818	P35-3	10.27	662.628	652.358
040818	P35-4	10.27	273.688	263.418
040818	P35-5	10.27	234.698	224.428
040818	P35-6	10.27	368.914	358.644
040818	P35-7	10.27	344.758	334.488
040818	P35-8	10.27	250.161	239.891
040818	P36-1	10.27	447.015	436.745
040818	P36-2	10.27	286.527	276.257
040818	P36-3	10.27	278.483	268.213
040818	P36-4	10.27	630.134	619.864
040818	P36-5	10.27	339.383	329.113
040818	P36-6	10.27	362.872	352.602
040818	P36-7	10.27	251.770	241.500
040818	P36-8	10.27	305.089	294.819
040818	P37-1	10.27	26.455	16.185
040818	P37-2	10.27	19.764	9.494
040818	P37-3	10.27	93.760	83.490
040818	P37-4	10.27	128.393	118.123
040818	P37-5	10.27	202.106	191.836
040818	P37-6	10.27	181.218	170.948
040818	P37-7	10.27	183.879	173.609
040818	P37-8	10.27	198.421	188.151
040818	P38-1	10.27	16.434	6.164
040818	P38-2	10.27	17.837	7.567
040818	P38-3	10.27	14.520	4.250
040818	P38-4	10.27	24.598	14.328
040818	P38-5	10.27	18.447	8.177
040818	P38-6	10.27	39.448	29.178
040818	P38-7	10.27	50.961	40.691
040818	P38-8	10.27	96.111	85.841
040818	P40-1	10.27	5.378	-4.892
040818	P40-2	10.27	4.843	-5.427
040818	P40-3	10.27	4.279	-5.991
040818	P40-4	10.27	4.915	-5.355
040818	P40-5	10.27	16.923	6.653
040818	P40-6	10.27	7.327	-2.943
040818	P40-7	10.27	16.994	6.724
040818	P40-8	10.27	7.864	-2.406
040818	P41-1	10.27	18.842	8.572
040818	P41-2	10.27	13.581	3.311
040818	P41-3	10.27	21.261	10.991
040818	P41-4	10.27	20.696	10.426
040818	P41-5	10.27	27.701	17.431
040818	P41-6	10.27	23.204	12.934
040818	P41-7	10.27	45.023	34.753
040818	P41-8	10.27	58.594	48.324
040818	P42-1	10.27	38.755	28.485
040818	P42-2	10.27	49.880	39.610
040818	P42-3	10.27	61.780	51.510
040818	P42-4	10.27	68.321	58.051
040818	P42-5	10.27	279.138	268.868
040818	P42-6	10.27	248.447	238.177
040818	P42-7	10.27	135.878	125.608
040818	P42-8	10.27	166.929	156.659
040818	P24-1	10.27	64.965	54.695
040818	P24-2	10.27	104.359	94.089
040818	P24-3	10.27	41.104	30.834
040818	P24-4	10.27	34.413	24.143
040818	P24-5	10.27	83.698	73.428
040818	P24-6	10.27	40.945	30.675
040818	P24-7	10.27	33.704	23.434
040818	P24-8	10.27	26.829	16.559

TEST CONDITIONS: FLOW:615GPM INJ:0.135GPM 4% NANOS TO P43 CASE 14

TEST ID	PIN-SENSOR	BASE		AVERAGE		INCREMENTAL	
		CONCENTRATION	PPM	CONCENTRATION	PPM	CONCENTRATION	PPM
040820	P44-1	10.27	80.974	70.704			
040820	P44-2	10.27	110.451	100.181			
040820	P44-3	10.27	184.654	174.384			
040820	P44-4	10.27	528.627	518.357			
040820	P44-5	10.27	618.993	608.723			
040820	P44-6	10.27	261.200	250.930			
040820	P44-7	10.27	293.351	283.081			
040820	P44-8	10.27	275.575	265.305			
040820	P45-1	10.27	64.359	54.089			
040820	P45-2	10.27	41.941	31.671			
040820	P45-3	10.27	295.365	285.095			
040820	P45-4	10.27	225.507	215.237			
040820	P45-5	10.27	261.545	251.275			
040820	P45-6	10.27	178.255	167.985			
040820	P45-7	10.27	230.537	220.267			
040820	P45-8	10.27	184.149	173.879			
040820	P46-1	10.27	26.016	15.746			
040820	P46-2	10.27	21.563	11.293			
040820	P46-3	10.27	13.523	3.253			
040820	P46-4	10.27	19.566	9.296			
040820	P46-5	10.27	27.071	16.801			
040820	P46-6	10.27	34.385	24.115			
040820	P46-7	10.27	75.996	65.726			
040820	P46-8	10.27	35.459	25.169			
040820	P47-1	10.27	6.147	-4.123			
040820	P47-2	10.27	8.206	-2.064			
040820	P47-3	10.27	6.546	-3.724			
040820	P47-4	10.27	8.536	-1.734			
040820	P47-5	10.27	10.443	.173			
040820	P47-6	10.27	9.227	-1.043			
040820	P47-7	10.27	19.200	8.930			
040820	P47-8	10.27	13.623	3.353			
040820	P48-1	10.27	16.167	5.897			
040820	P48-2	10.27	17.145	6.875			
040820	P48-3	10.27	19.257	8.987			
040820	P48-4	10.27	18.788	8.518			
040820	P48-5	10.27	22.003	11.733			
040820	P48-6	10.27	43.806	33.536			
040820	P48-7	10.27	79.030	68.760			

040820	P49-1	10.27	39.056	28.786	
040820	P49-2	10.27	49.526	39.256	
040820	P49-3	10.27	118.794	108.524	
040820	P49-4	10.27	211.138	200.868	
040820	P49-5	10.27	85.730	75.460	
040820	P49-6	10.27	113.803	103.533	
040820	P49-7	10.27	118.173	107.903	
040820	P49-8	10.27	141.217	130.947	
040820	P50-1	10.27	51.804	41.534	
040820	P50-2	10.27	60.613	50.343	
040820	P50-3	10.27	177.332	167.062	
040820	P50-4	10.27	150.243	139.973	
040820	P50-5	10.27	239.278	229.008	
040820	P50-6	10.27	155.121	144.851	
040820	P50-7	10.27	227.462	217.192	
040820	P50-8	10.27	122.137	111.867	
040820	P51-1	10.27	36.729	26.459	
040820	P51-2	10.27	37.381	27.111	
040820	P51-3	10.27	112.781	102.511	
040820	P51-4	10.27	51.262	40.992	
040820	P51-5	10.27	182.826	172.556	
040820	P51-6	10.27	126.650	116.380	
040820	P51-7	10.27	176.974	166.704	
040820	P51-8	10.27	165.223	154.953	
040820	P52-1	10.27	12.568	2.298	
040820	P52-2	10.27	18.494	8.224	
040820	P52-3	10.27	11.530	1.260	
040820	P52-4	10.27	14.455	4.185	
040820	P52-5	10.27	26.452	16.182	
040820	P52-6	10.27	40.566	30.296	
040820	P52-7	10.27	68.161	57.891	
040820	P52-8	10.27	72.384	62.114	
040820	P53-1	10.27	6.166	-4.104	
040820	P53-2	10.27	6.938	-3.332	
040820	P53-3	10.27	7.831	-2.439	
040820	P53-4	10.27	5.937	-4.333	
040820	P53-5	10.27	8.315	-1.955	
040820	P53-6	10.27	7.193	-3.077	
040820	P53-7	10.27	12.643	2.373	
040820	P53-8	10.27	9.935	-.335	
040820	P24-1	10.27	54.487	44.217	
040820	P24-2	10.27	107.017	96.747	
040820	P24-3	10.27	35.488	25.218	
040820	P24-4	10.27	30.641	20.371	
040820	P24-5	10.27	80.796	70.526	
040820	P24-6	10.27	31.642	21.372	
040820	P24-7	10.27	32.750	22.480	
040820	P24-8	10.27	23.651	13.381	

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
040821	P54-1	10.27	14.515	4.245
040821	P54-2	10.27	13.938	3.668
040821	P54-3	10.27	14.332	4.062
040821	P54-4	10.27	17.598	7.328
040821	P54-5	10.27	18.484	8.214
040821	P54-6	10.27	18.662	8.392
040821	P54-7	10.27	35.637	25.367
040821	P54-8	10.27	37.890	27.620
040821	P55-1	10.27	20.610	10.340
040821	P55-2	10.27	21.727	11.457
040821	P55-3	10.27	26.738	16.468
040821	P55-4	10.27	23.232	12.962
040821	P55-5	10.27	61.197	50.927
040821	P55-6	10.27	46.012	35.742
040821	P55-7	10.27	74.798	64.528
040821	P55-8	10.27	56.091	45.821
040821	P56-1	10.27	27.169	16.899
040821	P56-2	10.27	25.085	14.815
040821	P56-3	10.27	31.140	20.870
040821	P56-4	10.27	23.398	13.128
040821	P56-5	10.27	110.506	100.236
040821	P56-6	10.27	66.287	56.017
040821	P56-7	10.27	171.113	160.843
040821	P56-8	10.27	30.065	19.795
040821	P57-1	10.27	13.958	3.688
040821	P57-2	10.27	14.066	3.796
040821	P57-3	10.27	15.758	5.488
040821	P57-4	10.27	18.397	8.127
040821	P57-5	10.27	21.605	11.335
040821	P57-6	10.27	28.318	18.048
040821	P57-7	10.27	56.060	45.790
040821	P57-8	10.27	50.535	40.265
040821	P58-1	10.27	10.384	1.114
040821	P58-2	10.27	12.261	1.991
040821	P58-3	10.27	11.308	1.038
040821	P58-4	10.27	14.221	3.951
040821	P58-5	10.27	10.838	1.568
040821	P58-6	10.27	11.859	1.589
040821	P58-7	10.27	11.484	1.214
040821	P58-8	10.27	14.520	4.250
040821	P59-1	10.27	12.742	2.472
040821	P59-2	10.27	11.386	1.116
040821	P59-3	10.27	16.980	6.710
040821	P59-4	10.27	13.592	3.322
040821	P59-5	10.27	14.333	4.063
040821	P59-6	10.27	18.668	8.398
040821	P59-7	10.27	20.186	9.916
040821	P59-8	10.27	21.763	11.493
040821	P60-1	10.27	14.955	4.685
040821	P60-2	10.27	12.378	2.108
040821	P60-3	10.27	13.690	3.420
040821	P60-4	10.27	16.858	6.588
040821	P60-5	10.27	13.991	3.721
040821	P60-6	10.27	16.089	5.819
040821	P60-7	10.27	26.607	16.337
040821	P60-8	10.27	19.111	8.841
040821	P61-1	10.27	14.689	4.419
040821	P61-2	10.27	11.848	1.578
040821	P61-3	10.27	11.478	1.208
040821	P61-4	10.27	14.553	4.283
040821	P61-5	10.27	14.503	4.233
040821	P61-6	10.27	13.974	3.704
040821	P61-7	10.27	26.052	15.782
040821	P61-8	10.27	26.157	15.887
040821	P24-1	10.27	66.032	55.762
040821	P24-2	10.27	111.625	101.355
040821	P24-3	10.27	43.239	32.969
040821	P24-4	10.27	39.876	29.606
040821	P24-5	10.27	86.344	76.074
040821	P24-6	10.27	36.901	26.631
040821	P24-7	10.27	35.111	24.841
040821	P24-8	10.27	29.045	18.775

64. TEF D

65. SELECT CA021

PARAMETER TABLE CA021 LOADED.

66. READ BCD DATA ON E

TEST CONDITIONS: FLOW:430GPM NO INJECTION CASE 16

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042001	P1-1	11.46	7.996	-3.464
042001	P1-2	11.46	9.496	-1.964
042001	P1-3	11.46	9.441	-2.019
042001	P1-4	11.46	8.569	-2.871
042001	P1-5	11.46	9.490	-1.970
042001	P1-6	11.46	9.817	-1.643
042001	P1-7	11.46	30.789	19.329
042001	P1-8	11.46	9.769	-1.691
042001	P2-1	11.46	11.031	-.429
042001	P2-2	11.46	9.264	-1.596
042001	P2-3	11.46	10.645	-.815
042001	P2-4	11.46	12.291	.831
042001	P2-5	11.46	8.689	-2.771
042001	P2-6	11.46	10.994	-.466
042001	P2-7	11.46	8.647	-2.813
042001	P2-8	11.46	9.301	-2.159
042001	P3-1	11.46	11.888	.428
042001	P3-2	11.46	10.995	-.465
042001	P3-3	11.46	14.296	2.836
042001	P3-4	11.46	12.477	1.017
042001	P3-5	11.46	12.605	1.145
042001	P3-6	11.46	17.068	5.608
042001	P3-7	11.46	9.812	-1.648
042001	P3-8	11.46	10.825	-.635
042001	P4-1	11.46	9.549	-1.911
042001	P4-2	11.46	3.880	-7.580
042001	P4-3	11.46	8.955	-2.475
042001	P4-4	11.46	11.141	-.319
042001	P4-5	11.46	10.238	-1.222
042001	P4-6	11.46	8.425	-3.035
042001	P4-7	11.46	7.178	-4.282
042001	P4-8	11.46	6.788	-4.672
042001	P5-1	11.46	8.657	-2.803
042001	P5-2	11.46	10.926	-.534
042001	P5-3	11.46	7.324	-3.636
042001	P5-4	11.46	8.863	-2.597
042001	P5-5	11.46	9.391	-2.069
042001	P5-6	11.46	9.503	-1.957
042001	P5-7	11.46	10.516	-.944
042001	P5-8	11.46	10.806	-.654
042001	P6-1	11.46	10.078	-1.382
042001	P6-2	11.46	10.271	-1.189
042001	P6-3	11.46	11.167	-.293
042001	P6-4	11.46	7.803	-3.657
042001	P6-5	11.46	6.186	-5.274
042001	P6-6	11.46	12.194	.734
042001	P6-7	11.46	8.330	-3.130
042001	P6-8	11.46	9.676	-1.784
042001	P7-1	11.46	9.621	-1.839
042001	P7-2	11.46	10.038	-1.422
042001	P7-3	11.46	10.211	-1.249
042001	P7-4	11.46	8.557	-2.903
042001	P7-5	11.46	7.771	-3.689
042001	P7-6	11.46	8.195	-3.265
042001	P7-7	11.46	8.838	-2.622
042001	P7-8	11.46	10.955	-.505
042001	P8-1	11.46	11.595	.135
042001	P8-2	11.46	9.366	-2.094
042001	P8-3	11.46	12.845	1.425
042001	P8-4	11.46	7.076	-4.384
042001	P8-5	11.46	7.076	-4.384
042001	P8-6	11.46	13.191	1.731
042001	P8-7	11.46	13.209	1.749
042001	P8-8	11.46	13.179	1.719
042001	P9-1	11.46	30.531	19.071
042001	P9-2	11.46	34.154	22.694
042001	P9-3	11.46	25.110	13.650
042001	P9-4	11.46	32.100	20.640
042001	P9-5	11.46	41.103	29.643
042001	P9-6	11.46	33.914	22.454
042001	P9-7	11.46	39.149	27.689
042001	P9-8	11.46	37.740	26.280
042001	P10-1	11.46	10.310	-1.150
042001	P10-2	11.46	10.152	-1.278
042001	P10-3	11.46	8.198	-3.262
042001	P10-4	11.46	11.030	-.430
042001	P10-5	11.46	11.582	.122
042001	P10-6	11.46	9.143	-2.317
042001	P10-7	11.46	11.464	.004
042001	P10-8	11.46	10.406	-1.054
042001	P10-1	11.46	10.937	-.523
042001	P10-2	11.46	10.573	-.832
042001	P10-3	11.46	4.139	-7.321
042001	P10-4	11.46	11.051	-.409
042001	P10-5	11.46	8.614	-2.846
042001	P10-6	11.46	9.814	-1.646
042001	P10-7	11.46	9.510	-1.950
042001	P10-8	11.46	9.900	-1.560

TEST CONDITIONS: FLOW:430GPM NO INJECTION CASE 16

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042002	P11-1	11.46	9.899	-1.561
042002	P11-2	11.46	11.487	.027
042002	P11-3	11.46	12.414	.954
042002	P11-4	11.46	10.960	-.500
042002	P11-5	11.46	10.459	-1.001
042002	P11-6	11.46	11.534	.074
042002	P11-7	11.46	10.222	-1.238
042002	P11-8	11.46	12.223	.763
042002	P12-1	11.46	11.535	.075
042002	P12-2	11.46	11.063	-.397
042002	P12-3	11.46	12.509	1.049
042002	P12-4	11.46	12.104	.644
042002	P12-5	11.46	11.783	.323
042002	P12-6	11.46	14.128	2.668
042002	P12-7	11.46	16.191	4.731
042002	P12-8	11.46	9.848	-1.612
042002	P13-1	11.46	12.005	.545
042002	P13-2	11.46	11.655	.195
042002	P13-3	11.46	11.829	.369
042002	P13-4	11.46	11.343	-.117
042002	P13-5	11.46	11.280	-.180
042002	P13-6	11.46	9.759	-1.701
042002	P13-7	11.46	12.653	1.193
042002	P13-8	11.46	11.630	.170
042002	P13-1	11.46	12.135	.675
042002	P13-2	11.46	13.537	2.077
042002	P13-3	11.46	12.589	1.129
042002	P13-4	11.46	11.361	-.099
042002	P13-5	11.46	11.388	-.072
042002	P13-6	11.46	11.191	-.269
042002	P13-7	11.46	12.444	.984
042002	P13-8	11.46	14.919	3.459
042002	P17-1	11.46	12.386	1.426
042002	P17-2	11.46	11.925	.465
042002	P17-3	11.46	11.547	.087
042002	P17-4	11.46	12.317	.857
042002	P17-5	11.46	12.561	1.101
042002	P17-6	11.46	11.833	.373
042002	P17-7	11.46	12.161	.701
042002	P17-8	11.46	10.980	-.480

042002	P14-1	11.46	12.799	1.339
042002	P14-2	11.46	11.120	-.340
042002	P14-3	11.46	12.746	1.286
042002	P14-4	11.46	11.519	.059
042002	P14-5	11.46	12.600	1.140
042002	P14-6	11.46	11.379	.419
042002	P14-7	11.46	12.759	1.299
042002	P14-8	11.46	14.507	3.047
042002	P19-1	11.46	11.445	-.015
042002	P19-2	11.46	12.249	.789
042002	P19-3	11.46	12.330	.570
042002	P19-4	11.46	12.229	.769
042002	P19-5	11.46	9.936	-1.524
042002	P19-6	11.46	10.671	-.789
042002	P19-7	11.46	11.677	.217
042002	P19-8	11.46	11.276	-.184
042002	P20-1	11.46	12.399	.939
042002	P20-2	11.46	10.385	-1.075
042002	P20-3	11.46	12.226	.766
042002	P20-4	11.46	12.002	.542
042002	P20-5	11.46	12.038	.573
042002	P20-6	11.46	11.460	.000
042002	P20-7	11.46	10.759	-.701
042002	P20-8	11.46	11.808	.348
042002	P21-1	11.46	12.983	1.523
042002	P21-2	11.46	11.276	-.184
042002	P21-3	11.46	12.240	.780
042002	P21-4	11.46	11.608	-.452
042002	P21-5	11.46	12.509	1.109
042002	P21-6	11.46	11.337	-.123
042002	P21-7	11.46	12.730	1.270
042002	P21-8	11.46	13.660	2.200
042002	P16-1	11.46	9.899	-1.761
042002	P16-2	11.46	7.862	-3.598
042002	P16-3	11.46	8.050	-3.410
042002	P16-4	11.46	9.282	-2.176
042002	P16-5	11.46	9.438	-2.022
042002	P16-6	11.46	9.739	-1.721
042002	P16-7	11.46	10.071	-1.389
042002	P16-8	11.46	8.262	-3.198

11. TEF D

12. ENTER CAD43

PARAMETER TABLE CAD43 DATED 30 APR 71 ENTERED, LOC 1261560

13. SELECT CAD43

TEST CONDITIONS: FLOW:430GPM NO INJECTION CASE 16

TEST ID	PIR-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042603	P22-1	11.46	11.277	-.183
042603	P22-2	11.46	11.720	.260
042603	P22-3	11.46	12.335	1.375
042603	P22-4	11.46	12.169	.709
042603	P22-5	11.46	12.486	1.026
042603	P22-6	11.46	10.978	-.482
042603	P22-7	11.46	11.926	.466
042603	P22-8	11.46	11.692	.232
042603	P23-1	11.46	13.213	1.753
042603	P23-2	11.46	11.823	.363
042603	P23-3	11.46	12.385	.925
042603	P23-4	11.46	13.231	1.771
042603	P23-5	11.46	11.644	.184
042603	P23-6	11.46	11.903	.443
042603	P23-7	11.46	11.638	.178
042603	P23-8	11.46	15.102	3.642
042603	P24-1	11.46	14.727	3.267
042603	P24-2	11.46	14.587	3.127
042603	P24-3	11.46	15.263	3.803
042603	P24-4	11.46	10.327	-1.133
042603	P24-5	11.46	16.487	5.027
042603	P24-6	11.46	9.619	-1.841
042603	P24-7	11.46	12.282	.822
042603	P24-8	11.46	11.488	.028
042603	P25-1	11.46	12.318	.858
042603	P25-2	11.46	11.991	.531
042603	P25-3	11.46	12.824	1.364
042603	P25-4	11.46	10.652	-.808
042603	P25-5	11.46	11.074	-.386
042603	P25-6	11.46	12.407	.947
042603	P25-7	11.46	11.523	.063
042603	P25-8	11.46	10.951	-.509
042603	P26-1	11.46	11.973	.513
042603	P26-2	11.46	11.375	-.085
042603	P26-3	11.46	12.551	1.091
042603	P26-4	11.46	12.525	1.065
042603	P26-5	11.46	11.388	-.072
042603	P26-6	11.46	13.007	1.547
042603	P26-7	11.46	12.154	.694
042603	P26-8	11.46	11.557	.097
042603	P27-1	11.46	11.648	.188
042603	P27-2	11.46	11.387	-.073
042603	P27-3	11.46	11.402	-.058
042603	P27-4	11.46	11.372	-.088
042603	P27-5	11.46	11.411	-.049
042603	P27-6	11.46	11.714	.254
042603	P27-7	11.46	11.914	.454
042603	P27-8	11.46	12.417	.957
042603	P28-1	11.46	11.940	.480
042603	P28-2	11.46	11.663	.203
042603	P28-3	11.46	11.355	-.105
042603	P28-4	11.46	12.982	1.522
042603	P28-5	11.46	14.398	2.936
042603	P28-6	11.46	12.598	1.138
042603	P28-7	11.46	12.403	.943
042603	P28-8	11.46	11.320	-.140
042603	P29-1	11.46	12.802	1.342
042603	P29-2	11.46	12.334	.874
042603	P29-3	11.46	14.243	2.783
042603	P29-4	11.46	11.961	.501
042603	P29-5	11.46	13.710	2.250
042603	P29-6	11.46	12.020	.560
042603	P29-7	11.46	11.299	-.161
042603	P29-8	11.46	12.509	1.049
042603	P30-1	11.46	16.705	5.445
042603	P30-2	11.46	14.095	2.635
042603	P30-3	11.46	12.795	1.335
042603	P30-4	11.46	12.900	1.440
042603	P30-5	11.46	14.092	3.532
042603	P30-6	11.46	14.900	3.440
042603	P30-7	11.46	13.487	1.947
042603	P30-8	11.46	12.472	1.012
042603	P31-1	11.46	13.391	1.931
042603	P31-2	11.46	15.289	3.809
042603	P31-3	11.46	12.115	.655
042603	P31-4	11.46	12.408	.948
042603	P31-5	11.46	12.131	.671
042603	P31-6	11.46	13.116	1.656
042603	P31-7	11.46	12.220	.760
042603	P31-8	11.46	13.646	2.186
042603	P10-1	11.46	10.409	-.991
042603	P10-2	11.46	8.115	-3.345
042603	P10-3	11.46	9.303	-2.157
042603	P10-4	11.46	8.415	-3.045
042603	P10-5	11.46	9.204	-2.106
042603	P10-6	11.46	10.915	-.545
042603	P10-7	11.46	10.244	-1.216
042603	P10-8	11.46	10.534	-.926

TEST CONDITIONS: FLOW:430GPM NO INJECTION CASE 16

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042004	P32-1	11.46	12.034	.574
042004	P32-2	11.46	13.192	1.732
042004	P32-3	11.46	12.691	1.231
042004	P32-4	11.46	12.855	1.395
042004	P32-5	11.46	12.806	1.346
042004	P32-6	11.46	13.281	1.821
042004	P32-7	11.46	11.650	.190
042004	P32-8	11.46	12.457	.997
042004	P33-1	11.46	11.802	.342
042004	P33-2	11.46	10.919	-.541
042004	P33-3	11.46	13.869	2.409
042004	P33-4	11.46	12.012	.552
042004	P33-5	11.46	13.850	2.390
042004	P33-6	11.46	12.565	1.105
042004	P33-7	11.46	13.163	1.643
042004	P33-8	11.46	15.096	3.636
042004	P34-1	11.46	15.306	3.846
042004	P34-2	11.46	13.579	2.119
042004	P34-3	11.46	13.544	2.084
042004	P34-4	11.46	12.152	.692
042004	P34-5	11.46	13.221	1.761
042004	P34-6	11.46	11.642	.182
042004	P34-7	11.46	12.516	1.056
042004	P34-8	11.46	13.110	1.650
042004	P35-1	11.46	12.836	1.376
042004	P35-2	11.46	13.516	2.056
042004	P35-3	11.46	14.320	2.860
042004	P35-4	11.46	12.470	1.010
042004	P35-5	11.46	11.778	.318
042004	P35-6	11.46	14.173	2.713
042004	P35-7	11.46	12.326	1.366
042004	P35-8	11.46	14.346	2.886
042004	P36-1	11.46	13.067	1.607
042004	P36-2	11.46	13.551	2.091
042004	P36-3	11.46	14.564	3.044
042004	P36-4	11.46	13.051	1.591
042004	P36-5	11.46	13.537	2.077
042004	P36-6	11.46	13.904	2.444
042004	P36-7	11.46	12.827	1.367
042004	P36-8	11.46	13.692	2.232
042004	P37-1	11.46	13.348	1.888
042004	P37-2	11.46	13.404	1.944
042004	P37-3	11.46	13.768	2.308
042004	P37-4	11.46	11.277	-.133
042004	P37-5	11.46	12.703	1.243
042004	P37-6	11.46	11.414	-.046
042004	P37-7	11.46	13.739	2.279
042004	P37-8	11.46	13.712	2.252
042004	P38-1	11.46	15.422	3.962
042004	P38-2	11.46	12.745	1.285
042004	P38-3	11.46	15.824	4.364
042004	P38-4	11.46	12.469	1.009
042004	P38-5	11.46	13.166	1.726
042004	P38-6	11.46	12.478	1.018
042004	P38-7	11.46	12.998	1.538
042004	P38-8	11.46	12.180	.720
042004	P40-1	11.46	12.925	1.465
042004	P40-2	11.46	13.169	1.709
042004	P40-3	11.46	13.248	1.736
042004	P40-4	11.46	13.352	1.992
042004	P40-5	11.46	11.810	.350
042004	P40-6	11.46	13.002	1.542
042004	P40-7	11.46	13.548	2.088
042004	P40-8	11.46	14.242	2.782
042004	P41-1	11.46	12.178	.718
042004	P41-2	11.46	12.249	.789
042004	P41-3	11.46	12.829	1.369
042004	P41-4	11.46	12.340	.880
042004	P41-5	11.46	13.080	1.620
042004	P41-6	11.46	12.736	1.276
042004	P41-7	11.46	13.905	2.445
042004	P41-8	11.46	12.182	.722
042004	P42-1	11.46	12.607	1.147
042004	P42-2	11.46	13.225	1.765
042004	P42-3	11.46	10.564	-.896
042004	P42-4	11.46	12.318	.858
042004	P42-5	11.46	11.128	-.332
042004	P42-6	11.46	12.176	.716
042004	P42-7	11.46	13.373	1.913
042004	P42-8	11.46	12.838	1.378
042004	P10-1	11.46	11.576	.116
042004	P10-2	11.46	12.499	1.039
042004	P10-3	11.46	13.579	2.119
042004	P10-4	11.46	12.038	.578
042004	P10-5	11.46	12.292	.832
042004	P10-6	11.46	12.165	.705
042004	P10-7	11.46	12.398	.938
042004	P10-8	11.46	10.903	-.557

TEST CONDITIONS: FLOW:4300PPM NO INJECTION CASE 16

TEST ID	PISTON SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042005	P44-1	11.46	11.489	.029
042005	P44-2	11.46	13.055	1.595
042005	P44-3	11.46	11.458	-.002
042005	P44-4	11.46	12.153	.693
042005	P44-5	11.46	11.837	.377
042005	P44-6	11.46	13.051	1.591
042005	P44-7	11.46	11.013	-.447
042005	P44-8	11.46	14.711	3.251
042005	P45-1	11.46	11.824	.364
042005	P45-2	11.46	10.502	-.958
042005	P45-3	11.46	10.928	-.532
042005	P45-4	11.46	12.012	.552
042005	P45-5	11.46	10.820	-.640
042005	P45-6	11.46	11.264	-.196
042005	P45-7	11.46	12.152	.692
042005	P45-8	11.46	14.785	3.325
042005	P46-1	11.46	11.872	.412
042005	P46-2	11.46	11.366	-.094
042005	P46-3	11.46	12.249	.789
042005	P46-4	11.46	11.258	-.202
042005	P46-5	11.46	11.488	.028
042005	P46-6	11.46	11.554	.094
042005	P46-7	11.46	11.566	.106
042005	P46-8	11.46	11.486	.026
042005	P47-1	11.46	11.698	.438
042005	P47-2	11.46	12.484	1.024
042005	P47-3	11.46	12.009	.549
042005	P47-4	11.46	12.602	1.222
042005	P47-5	11.46	11.868	.408
042005	P47-6	11.46	12.556	1.096
042005	P47-7	11.46	11.193	-.307
042005	P47-8	11.46	11.792	.332
042005	P48-1	11.46	10.763	-.697
042005	P48-2	11.46	10.917	-.643
042005	P48-3	11.46	11.962	.502
042005	P48-4	11.46	9.076	-2.384
042005	P48-5	11.46	11.438	-.022
042005	P48-6	11.46	10.963	-.497
042005	P48-7	11.46	11.885	.425
042005	P48-8	11.46	11.760	.300
042005	P49-1	11.46	12.011	.551
042005	P49-2	11.46	12.325	.865
042005	P49-3	11.46	11.806	.346
042005	P49-4	11.46	13.031	1.571
042005	P49-5	11.46	12.310	.850
042005	P49-6	11.46	11.939	.479
042005	P49-7	11.46	11.057	-.403
042005	P49-8	11.46	12.310	.850
042005	P50-1	11.46	12.837	1.377
042005	P50-2	11.46	11.481	.021
042005	P50-3	11.46	12.699	1.439
042005	P50-4	11.46	12.520	1.060
042005	P50-5	11.46	12.279	.819
042005	P50-6	11.46	12.863	1.403
042005	P50-7	11.46	11.789	.329
042005	P50-8	11.46	13.154	1.694
042005	P51-1	11.46	13.553	2.093
042005	P51-2	11.46	13.626	2.166
042005	P51-3	11.46	11.640	.180
042005	P51-4	11.46	12.810	1.350
042005	P51-5	11.46	12.632	1.172
042005	P51-6	11.46	12.422	.962
042005	P51-7	11.46	12.061	.601
042005	P51-8	11.46	14.121	2.661
042005	P52-1	11.46	13.541	2.081
042005	P52-2	11.46	11.686	.226
042005	P52-3	11.46	11.724	.264
042005	P52-4	11.46	12.038	.578
042005	P52-5	11.46	12.023	.563
042005	P52-6	11.46	13.245	1.785
042005	P52-7	11.46	11.520	.060
042005	P52-8	11.46	11.975	.515
042005	P53-1	11.46	14.574	3.114
042005	P53-2	11.46	14.763	3.303
042005	P53-3	11.46	12.961	1.401
042005	P53-4	11.46	13.427	1.967
042005	P53-5	11.46	11.968	.508
042005	P53-6	11.46	12.695	1.235
042005	P53-7	11.46	12.272	.812
042005	P53-8	11.46	13.540	2.080
042005	P10-1	11.46	10.709	-.751
042005	P10-2	11.46	11.067	-.393
042005	P10-3	11.46	12.363	.903
042005	P10-4	11.46	11.862	.402
042005	P10-5	11.46	11.150	-.310
042005	P10-6	11.46	12.545	1.085
042005	P10-7	11.46	10.561	-.899
042005	P10-8	11.46	11.461	.001

TEST CONDITIONS: FLOW:430GPM NO INJECTION CASE 16

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042606	P54-1	11.46	11.461	.001
042606	P54-2	11.46	12.743	1.283
042606	P54-3	11.46	11.461	.001
042606	P54-4	11.46	13.273	1.813
042606	P54-5	11.46	11.557	.097
042606	P54-6	11.46	13.572	2.112
042606	P54-7	11.46	10.572	-.888
042606	P54-8	11.46	11.936	.476
042606	P55-1	11.46	9.992	-1.468
042606	P55-2	11.46	11.629	.169
042606	P55-3	11.46	11.095	-.365
042606	P55-4	11.46	13.505	2.045
042606	P55-5	11.46	10.147	-1.313
042606	P55-6	11.46	10.787	-.673
042606	P55-7	11.46	12.294	.834
042606	P55-8	11.46	11.763	.303
042606	P56-1	11.46	11.178	-.282
042606	P56-2	11.46	9.060	-2.400
042606	P56-3	11.46	12.454	.994
042606	P56-4	11.46	9.789	-1.671
042606	P56-5	11.46	12.542	1.082
042606	P56-6	11.46	12.280	.820
042606	P56-7	11.46	12.549	1.089
042606	P56-8	11.46	11.797	.337
042606	P57-1	11.46	12.146	.686
042606	P57-2	11.46	11.538	.078
042606	P57-3	11.46	10.997	-.463
042606	P57-4	11.46	10.686	-.774
042606	P57-5	11.46	12.065	.605
042606	P57-6	11.46	10.622	-.838
042606	P57-7	11.46	12.649	1.189
042606	P57-8	11.46	11.224	-.236
042606	P58-1	11.46	10.851	-.609
042606	P58-2	11.46	11.322	-.138
042606	P58-3	11.46	10.319	-1.141
042606	P58-4	11.46	9.983	-1.477
042606	P58-5	11.46	10.503	-.957
042606	P58-6	11.46	10.743	-.717
042606	P58-7	11.46	11.816	.356
042606	P58-8	11.46	9.150	-2.310
042606	P59-1	11.46	10.300	-1.160
042606	P59-2	11.46	9.798	-1.662
042606	P59-3	11.46	12.024	.564
042606	P59-4	11.46	12.973	1.513
042606	P59-5	11.46	11.627	.167
042606	P59-6	11.46	10.547	-.913
042606	P59-7	11.46	11.404	-.056
042606	P59-8	11.46	10.726	-.734
042606	P60-1	11.46	12.098	.638
042606	P60-2	11.46	15.728	4.260
042606	P60-3	11.46	14.916	3.450
042606	P60-4	11.46	12.734	1.274
042606	P60-5	11.46	13.047	1.587
042606	P60-6	11.46	12.773	1.313
042606	P60-7	11.46	11.556	.096
042606	P60-8	11.46	11.846	.386
042606	P61-1	11.46	11.633	.173
042606	P61-2	11.46	12.928	1.460
042606	P61-3	11.46	12.247	.787
042606	P61-4	11.46	13.683	2.223
042606	P61-5	11.46	12.968	1.508
042606	P61-6	11.46	13.798	2.336
042606	P61-7	11.46	13.694	2.234
042606	P61-8	11.46	11.857	.397
042606	P10-1	11.46	10.098	-1.362
042606	P10-2	11.46	10.168	-1.292
042606	P10-3	11.46	10.959	-.501
042606	P10-4	11.46	9.740	-1.720
042606	P10-5	11.46	10.899	-.561
042606	P10-6	11.46	10.688	-.772
042606	P10-7	11.46	10.453	-1.007
042606	P10-8	11.46	9.266	-2.194

27. TLF U

28. SELECT CAD41

PARAMETER TABLE CAD41 LOADED.

29. READ BCU DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042707	P1-1	11.46	18.304	6.844
042707	P1-2	11.46	17.175	5.715
042707	P1-3	11.46	19.983	8.523
042707	P1-4	11.46	29.578	18.118
042707	P1-5	11.46	18.863	7.403
042707	P1-6	11.46	11.971	.511
042707	P1-7	11.46	28.607	17.147
042707	P1-8	11.46	23.991	12.531
042707	P2-1	11.46	31.807	20.347
042707	P2-2	11.46	6.789	-4.671
042707	P2-3	11.46	15.845	4.385
042707	P2-4	11.46	25.288	13.828
042707	P2-5	11.46	17.841	6.381
042707	P2-6	11.46	13.499	2.039
042707	P2-7	11.46	24.525	13.065
042707	P2-8	11.46	9.771	-1.689
042707	P3-1	11.46	13.344	1.884
042707	P3-2	11.46	18.232	6.772
042707	P3-3	11.46	15.777	4.317
042707	P3-4	11.46	20.601	9.141
042707	P3-5	11.46	33.785	22.325
042707	P3-6	11.46	23.760	12.300
042707	P3-7	11.46	14.725	3.265
042707	P3-8	11.46	19.835	8.375
042707	P4-1	11.46	20.250	8.790
042707	P4-2	11.46	20.494	9.034
042707	P4-3	11.46	22.935	11.475
042707	P4-4	11.46	36.420	24.960
042707	P4-5	11.46	32.175	20.715
042707	P4-6	11.46	42.603	31.143
042707	P4-7	11.46	35.960	24.520
042707	P4-8	11.46	34.189	22.729
042707	P5-1	11.46	91.670	380.210
042707	P5-2	11.46	133.658	122.198
042707	P5-3	11.46	91.555	80.095
042707	P5-4	11.46	99.204	87.744
042707	P5-5	11.46	66.134	54.674
042707	P5-6	11.46	89.276	77.816
042707	P5-7	11.46	52.723	41.263
042707	P5-8	11.46	81.005	69.545
042707	P6-1	11.46	45.130	33.670
042707	P6-2	11.46	39.580	28.120
042707	P6-3	11.46	643.206	631.746
042707	P6-4	11.46	455.948	444.488
042707	P6-5	11.46	385.943	374.483
042707	P6-6	11.46	239.511	228.051
042707	P6-7	11.46	133.968	122.508
042707	P6-8	11.46	80.923	69.463
042707	P7-1	11.46	95.760	84.300
042707	P7-2	11.46	258.056	246.596
042707	P7-3	11.46	213.633	202.173
042707	P7-4	11.46	166.525	155.065
042707	P7-5	11.46	99.618	88.158
042707	P7-6	11.46	131.039	119.579
042707	P7-7	11.46	98.802	87.342
042707	P7-8	11.46	154.393	142.933
042707	P8-1	11.46	32.903	21.443
042707	P8-2	11.46	59.346	47.886
042707	P8-3	11.46	171.393	159.933
042707	P8-4	11.46	101.812	90.352
042707	P8-5	11.46	263.946	252.486
042707	P8-6	11.46	80.934	69.474
042707	P8-7	11.46	122.230	110.770
042707	P8-8	11.46	201.516	190.056
042707	P9-1	11.46	50.149	48.689
042707	P9-2	11.46	48.030	36.570
042707	P9-3	11.46	54.452	42.992
042707	P9-4	11.46	51.902	40.442
042707	P9-5	11.46	156.303	144.843
042707	P9-6	11.46	104.257	92.797
042707	P9-7	11.46	199.629	188.169
042707	P9-8	11.46	20.674	9.214
042707	P10-1	11.46	14.628	3.168
042707	P10-2	11.46	4.726	-6.734
042707	P10-3	11.46	10.386	-1.074
042707	P10-4	11.46	12.721	1.261
042707	P10-5	11.46	13.460	2.000
042707	P10-6	11.46	16.453	4.993
042707	P10-7	11.46	15.648	4.188
042707	P10-8	11.46	8.301	-3.159
042707	P10-1	11.46	40.674	29.214
042707	P10-2	11.46	35.369	23.909
042707	P10-3	11.46	241.041	229.581
042707	P10-4	11.46	75.400	63.940
042707	P10-5	11.46	197.163	185.703
042707	P10-6	11.46	101.647	90.187
042707	P10-7	11.46	143.079	131.619
042707	P10-8	11.46	100.382	88.922

TEST ID	PIH-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042008	P11-1	11.46	12.570	1.110
042008	P11-2	11.46	12.800	1.340
042008	P11-3	11.46	14.933	3.473
042008	P11-4	11.46	12.349	.889
042008	P11-5	11.46	13.010	1.550
042008	P11-6	11.46	12.363	1.403
042008	P11-7	11.46	12.171	.711
042008	P11-8	11.46	16.473	5.013
042008	P12-1	11.46	13.306	1.846
042008	P12-2	11.46	13.891	2.431
042008	P12-3	11.46	14.870	3.410
042008	P12-4	11.46	13.684	2.224
042008	P12-5	11.46	13.535	2.075
042008	P12-6	11.46	16.432	4.972
042008	P12-7	11.46	15.693	4.233
042008	P12-8	11.46	15.704	4.244
042008	P13-1	11.46	16.808	5.348
042008	P13-2	11.46	16.373	4.913
042008	P13-3	11.46	23.994	12.534
042008	P13-4	11.46	17.221	5.761
042008	P13-5	11.46	16.890	5.430
042008	P13-6	11.46	16.382	4.922
042008	P13-7	11.46	18.226	6.766
042008	P13-8	11.46	13.134	1.674
042008	P15-1	11.46	56.878	45.418
042008	P15-2	11.46	42.568	31.108
042008	P15-3	11.46	262.954	251.494
042008	P15-4	11.46	149.544	138.084
042008	P15-5	11.46	140.698	129.238
042008	P15-6	11.46	91.422	79.962
042008	P15-7	11.46	108.774	97.314
042008	P15-8	11.46	65.662	74.202
042008	P17-1	11.46	41.441	29.981
042008	P17-2	11.46	20.443	8.983
042008	P17-3	11.46	45.511	34.051
042008	P17-4	11.46	40.241	28.781
042008	P17-5	11.46	111.268	99.808
042008	P17-6	11.46	35.156	23.696
042008	P17-7	11.46	111.267	99.807
042008	P17-8	11.46	86.751	75.291
042008	P18-1	11.46	24.417	12.957
042008	P18-2	11.46	22.350	10.890
042008	P18-3	11.46	25.241	13.781
042008	P18-4	11.46	25.868	14.408
042008	P18-5	11.46	66.699	55.239
042008	P18-6	11.46	34.486	23.026
042008	P18-7	11.46	123.029	111.569
042008	P18-8	11.46	78.527	67.067
042008	P19-1	11.46	21.920	10.460
042008	P19-2	11.46	27.734	16.274
042008	P19-3	11.46	21.010	9.550
042008	P19-4	11.46	21.894	10.434
042008	P19-5	11.46	30.352	18.892
042008	P19-6	11.46	23.410	11.950
042008	P19-7	11.46	98.935	87.475
042008	P19-8	11.46	97.563	86.103
042008	P20-1	11.46	16.302	4.842
042008	P20-2	11.46	13.439	1.979
042008	P20-3	11.46	14.821	3.361
042008	P20-4	11.46	13.484	2.024
042008	P20-5	11.46	14.762	3.302
042008	P20-6	11.46	15.640	4.180
042008	P20-7	11.46	11.835	.375
042008	P20-8	11.46	12.829	1.369
042008	P21-1	11.46	14.924	3.464
042008	P21-2	11.46	13.543	2.083
042008	P21-3	11.46	13.799	2.339
042008	P21-4	11.46	12.619	1.159
042008	P21-5	11.46	15.560	4.100
042008	P21-6	11.46	13.915	2.455
042008	P21-7	11.46	15.603	4.143
042008	P21-8	11.46	16.039	4.579
042008	P10-1	11.46	47.627	36.167
042008	P10-2	11.46	43.589	32.129
042008	P16-3	11.46	228.339	216.879
042008	P10-4	11.46	82.687	71.227
042008	P10-5	11.46	211.327	199.867
042008	P10-6	11.46	99.286	87.826
042008	P10-7	11.46	141.476	130.016
042008	P10-8	11.46	99.525	88.065

33. TEF 0

34. SELECT CAD43

PARAMETER TABLE CAD43 LOADED.

35. READ BCU DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042009	P22-1	11.46	12.345	.885
042009	P22-2	11.46	12.271	.811
042009	P22-3	11.46	13.877	2.417
042009	P22-4	11.46	12.313	.853
042009	P22-5	11.46	13.623	2.163
042009	P22-6	11.46	11.448	-.012
042009	P22-7	11.46	14.293	2.833
042009	P22-8	11.46	13.152	1.692
042009	P23-1	11.46	15.796	4.336
042009	P23-2	11.46	13.900	2.440
042009	P23-3	11.46	20.276	8.816
042009	P23-4	11.46	21.352	9.892
042009	P23-5	11.46	16.496	5.036
042009	P23-6	11.46	18.900	7.440
042009	P23-7	11.46	20.871	9.411
042009	P23-8	11.46	25.793	14.333
042009	P24-1	11.46	22.669	11.209
042009	P24-2	11.46	22.201	10.741
042009	P24-3	11.46	29.691	18.231
042009	P24-4	11.46	35.011	23.551
042009	P24-5	11.46	40.048	28.588
042009	P24-6	11.46	33.414	21.954
042009	P24-7	11.46	44.538	33.078
042009	P24-8	11.46	18.304	6.844
042009	P25-1	11.46	15.576	4.116
042009	P25-2	11.46	15.371	3.911
042009	P25-3	11.46	16.581	5.121
042009	P25-4	11.46	12.611	1.151
042009	P25-5	11.46	13.872	2.412
042009	P25-6	11.46	15.552	4.092
042009	P25-7	11.46	15.349	3.889
042009	P25-8	11.46	26.086	14.626
042009	P26-1	11.46	20.281	8.821
042009	P26-2	11.46	18.601	7.141
042009	P26-3	11.46	22.672	11.212
042009	P26-4	11.46	22.401	10.941
042009	P26-5	11.46	50.353	38.893
042009	P26-6	11.46	35.482	24.022
042009	P26-7	11.46	46.533	35.073
042009	P26-8	11.46	37.074	25.614
042009	P27-1	11.46	18.979	7.519
042009	P27-2	11.46	16.824	5.364
042009	P27-3	11.46	17.418	5.958
042009	P27-4	11.46	17.291	5.831
042009	P27-5	11.46	28.591	17.131
042009	P27-6	11.46	19.022	7.562
042009	P27-7	11.46	63.102	51.642
042009	P27-8	11.46	33.488	22.028
042009	P28-1	11.46	14.712	3.252
042009	P28-2	11.46	15.830	4.370
042009	P28-3	11.46	12.872	1.412
042009	P28-4	11.46	16.480	5.020
042009	P28-5	11.46	16.949	5.489
042009	P28-6	11.46	16.884	5.424
042009	P28-7	11.46	58.450	46.990
042009	P28-8	11.46	32.931	21.471
042009	P29-1	11.46	18.323	6.863
042009	P29-2	11.46	14.702	3.242
042009	P29-3	11.46	16.703	5.243
042009	P29-4	11.46	15.467	4.007
042009	P29-5	11.46	18.575	7.115
042009	P29-6	11.46	14.165	2.705
042009	P29-7	11.46	39.622	28.162
042009	P29-8	11.46	25.539	14.079
042009	P30-1	11.46	19.050	7.590
042009	P30-2	11.46	15.193	3.733
042009	P30-3	11.46	13.485	2.025
042009	P30-4	11.46	14.166	2.706
042009	P30-5	11.46	16.571	5.111
042009	P30-6	11.46	16.902	5.442
042009	P30-7	11.46	14.733	3.273
042009	P30-8	11.46	13.245	1.785
042009	P31-1	11.46	13.197	1.737
042009	P31-2	11.46	14.668	3.208
042009	P31-3	11.46	11.728	.268
042009	P31-4	11.46	11.854	.394
042009	P31-5	11.46	12.100	.640
042009	P31-6	11.46	13.235	1.775
042009	P31-7	11.46	11.963	.503
042009	P31-8	11.46	14.357	2.897
042009	P10-1	11.46	43.080	31.620
042009	P10-2	11.46	39.474	28.014
042009	P10-3	11.46	220.345	208.885
042009	P10-4	11.46	37.177	25.717
042009	P10-5	11.46	196.842	185.382
042009	P10-6	11.46	102.793	91.333
042009	P10-7	11.46	144.188	132.728
042009	P10-8	11.46	100.449	88.999

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042010	P32-1	11.46	13.005	1.545
042010	P32-2	11.46	12.386	.920
042010	P32-3	11.46	12.420	.960
042010	P32-4	11.46	11.755	.295
042010	P32-5	11.46	14.120	2.660
042010	P32-6	11.46	11.894	.434
042010	P32-7	11.46	12.341	.881
042010	P32-8	11.46	12.120	.660
042010	P33-1	11.46	14.874	3.414
042010	P33-2	11.46	13.130	1.670
042010	P33-3	11.46	14.921	3.461
042010	P33-4	11.46	12.997	1.537
042010	P33-5	11.46	15.035	3.575
042010	P33-6	11.46	12.798	1.338
042010	P33-7	11.46	15.285	3.825
042010	P33-8	11.46	14.691	3.231
042010	P34-1	11.46	17.488	6.028
042010	P34-2	11.46	14.803	3.343
042010	P34-3	11.46	14.847	3.387
042010	P34-4	11.46	13.027	1.567
042010	P34-5	11.46	13.152	1.692
042010	P34-6	11.46	12.814	1.354
042010	P34-7	11.46	12.208	.748
042010	P34-8	11.46	12.866	1.406
042010	P35-1	11.46	7.509	-3.951
042010	P35-2	11.46	16.165	4.705
042010	P35-3	11.46	16.127	4.667
042010	P35-4	11.46	15.099	3.639
042010	P35-5	11.46	12.823	1.363
042010	P35-6	11.46	16.606	5.146
042010	P35-7	11.46	14.564	3.104
042010	P35-8	11.46	20.426	8.966
042010	P36-1	11.46	15.313	3.853
042010	P36-2	11.46	14.658	3.198
042010	P36-3	11.46	16.325	4.865
042010	P36-4	11.46	15.419	3.959
042010	P36-5	11.46	23.584	12.124
042010	P36-6	11.46	15.432	3.972
042010	P36-7	11.46	21.197	9.737
042010	P36-8	11.46	16.268	4.808
042010	P37-1	11.46	15.854	4.394
042010	P37-2	11.46	13.546	2.086
042010	P37-3	11.46	16.942	5.482
042010	P37-4	11.46	13.531	2.071
042010	P37-5	11.46	16.356	4.896
042010	P37-6	11.46	14.079	2.619
042010	P37-7	11.46	25.236	13.776
042010	P37-8	11.46	23.780	12.320
042010	P38-1	11.46	17.893	6.433
042010	P38-2	11.46	14.224	2.764
042010	P38-3	11.46	17.399	5.939
042010	P38-4	11.46	14.283	2.823
042010	P38-5	11.46	15.513	4.053
042010	P38-6	11.46	13.843	2.383
042010	P38-7	11.46	22.915	11.455
042010	P38-8	11.46	17.228	5.768
042010	P40-1	11.46	13.775	2.315
042010	P40-2	11.46	12.402	.942
042010	P40-3	11.46	12.877	1.417
042010	P40-4	11.46	12.737	1.277
042010	P40-5	11.46	14.048	2.588
042010	P40-6	11.46	12.877	1.417
042010	P40-7	11.46	15.007	3.547
042010	P40-8	11.46	14.601	3.141
042010	P41-1	11.46	13.654	2.194
042010	P41-2	11.46	15.611	4.151
042010	P41-3	11.46	13.831	2.371
042010	P41-4	11.46	12.014	.554
042010	P41-5	11.46	14.977	3.517
042010	P41-6	11.46	13.940	2.480
042010	P41-7	11.46	13.516	2.056
042010	P41-8	11.46	13.472	2.012
042010	P42-1	11.46	14.120	2.660
042010	P42-2	11.46	14.457	2.997
042010	P42-3	11.46	11.105	-.355
042010	P42-4	11.46	12.046	.586
042010	P42-5	11.46	10.084	-1.376
042010	P42-6	11.46	13.590	2.130
042010	P42-7	11.46	14.921	3.461
042010	P42-8	11.46	13.692	2.232
042010	P10-1	11.46	41.804	30.344
042010	P10-2	11.46	43.416	31.956
042010	P10-3	11.46	219.349	207.889
042010	P10-4	11.46	83.168	71.708
042010	P10-5	11.46	204.798	193.338
042010	P10-6	11.46	101.072	89.612
042010	P10-7	11.46	138.507	127.047
042010	P10-8	11.46	100.936	89.476

TEST ID	PIH-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042011	P44-1	11.46	12.261	.801
042011	P44-2	11.46	14.164	2.704
042011	P44-3	11.46	11.892	.432
042011	P44-4	11.46	14.760	3.300
042011	P44-5	11.46	11.411	-.049
042011	P44-6	11.46	15.083	3.623
042011	P44-7	11.46	13.358	1.898
042011	P44-8	11.46	17.623	6.163
042011	P45-1	11.46	11.112	-.346
042011	P45-2	11.46	10.881	-.579
042011	P45-3	11.46	11.902	.442
042011	P45-4	11.46	10.505	-.955
042011	P45-5	11.46	11.111	-.349
042011	P45-6	11.46	12.144	.684
042011	P45-7	11.46	12.825	1.365
042011	P45-8	11.46	11.479	.019
042011	P46-1	11.46	15.252	3.792
042011	P46-2	11.46	12.029	.569
042011	P46-3	11.46	12.541	1.081
042011	P46-4	11.46	12.330	.870
042011	P46-5	11.46	11.580	.120
042011	P46-6	11.46	11.558	.098
042011	P46-7	11.46	13.012	1.552
042011	P46-8	11.46	11.465	.005
042011	P47-1	11.46	10.316	-1.144
042011	P47-2	11.46	12.578	1.118
042011	P47-3	11.46	12.436	.976
042011	P47-4	11.46	11.399	-.061
042011	P47-5	11.46	11.648	.188
042011	P47-6	11.46	13.449	1.989
042011	P47-7	11.46	11.885	.425
042011	P47-8	11.46	11.768	.308
042011	P48-1	11.46	10.333	-1.127
042011	P48-2	11.46	10.832	-.628
042011	P48-3	11.46	10.969	-.491
042011	P48-4	11.46	8.953	-2.507
042011	P48-5	11.46	13.127	1.667
042011	P48-6	11.46	11.222	-.236
042011	P48-7	11.46	11.991	.531
042011	P48-8	11.46	9.894	-1.566

042011	P49-1	11.46	12.878	1.418
042011	P49-2	11.46	13.314	1.854
042011	P49-3	11.46	13.597	2.137
042011	P49-4	11.46	13.998	2.538
042011	P49-5	11.46	12.767	1.307
042011	P49-6	11.46	11.739	.279
042011	P49-7	11.46	11.331	-.129
042011	P49-8	11.46	13.113	1.653
042011	P50-1	11.46	13.957	2.497
042011	P50-2	11.46	13.097	1.637
042011	P50-3	11.46	13.507	2.047
042011	P50-4	11.46	12.008	.548
042011	P50-5	11.46	14.285	2.825
042011	P50-6	11.46	12.941	1.481
042011	P50-7	11.46	11.003	-.457
042011	P50-8	11.46	12.725	1.265
042011	P51-1	11.46	13.624	2.164
042011	P51-2	11.46	12.934	1.474
042011	P51-3	11.46	12.062	.602
042011	P51-4	11.46	13.218	1.758
042011	P51-5	11.46	12.198	.738
042011	P51-6	11.46	11.443	-.017
042011	P51-7	11.46	11.812	.352
042011	P51-8	11.46	14.977	3.517
042011	P52-1	11.46	15.776	4.316
042011	P52-2	11.46	11.297	-.163
042011	P52-3	11.46	12.798	1.338
042011	P52-4	11.46	12.288	.828
042011	P52-5	11.46	12.855	1.395
042011	P52-6	11.46	13.561	2.101
042011	P52-7	11.46	12.721	1.261
042011	P52-8	11.46	13.330	1.870
042011	P53-1	11.46	15.239	3.779
042011	P53-2	11.46	16.438	4.978
042011	P53-3	11.46	13.874	2.414
042011	P53-4	11.46	15.001	3.541
042011	P53-5	11.46	13.392	1.932
042011	P53-6	11.46	13.123	1.663
042011	P53-7	11.46	15.073	3.613
042011	P53-8	11.46	15.606	4.146
042011	P10-1	11.46	43.965	32.505
042011	P10-2	11.46	37.854	26.394
042011	P10-3	11.46	206.790	195.330
042011	P10-4	11.46	80.347	68.887
042011	P10-5	11.46	180.927	169.467
042011	P10-6	11.46	100.158	88.698
042011	P10-7	11.46	139.146	127.686
042011	P10-8	11.46	95.766	84.306

TEST ID	PIR-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042612	P54-1	11.46	13.412	1.952
042612	P54-2	11.46	16.389	4.929
042612	P54-3	11.46	14.814	3.354
042612	P54-4	11.46	16.080	4.620
042612	P54-5	11.46	15.289	3.829
042612	P54-6	11.46	18.474	7.014
042612	P54-7	11.46	10.751	-7.709
042612	P54-8	11.46	15.822	4.362
042612	P55-1	11.46	11.624	.164
042612	P55-2	11.46	14.595	3.135
042612	P55-3	11.46	12.979	1.519
042612	P55-4	11.46	15.579	4.119
042612	P55-5	11.46	15.579	4.119
042612	P55-6	11.46	13.044	1.584
042612	P55-7	11.46	15.274	3.814
042612	P55-8	11.46	13.525	2.065
042612	P56-1	11.46	13.866	2.406
042612	P56-2	11.46	11.890	.430
042612	P56-3	11.46	14.915	3.455
042612	P56-4	11.46	11.630	.170
042612	P56-5	11.46	18.185	6.725
042612	P56-6	11.46	17.097	5.637
042612	P56-7	11.46	16.681	5.221
042612	P56-8	11.46	12.090	.630
042612	P57-1	11.46	13.572	2.112
042612	P57-2	11.46	14.182	2.722
042612	P57-3	11.46	12.481	1.021
042612	P57-4	11.46	11.671	.211
042612	P57-5	11.46	15.015	3.555
042612	P57-6	11.46	11.580	.120
042612	P57-7	11.46	15.362	3.902
042612	P57-8	11.46	11.142	-.318
042612	P58-1	11.46	12.943	1.483
042612	P58-2	11.46	12.282	.822
042612	P58-3	11.46	12.622	1.162
042612	P58-4	11.46	11.474	.014
042612	P58-5	11.46	13.085	1.625
042612	P58-6	11.46	11.907	.447
042612	P58-7	11.46	13.731	2.271
042612	P58-8	11.46	11.822	.362
042612	P59-1	11.46	19.333	7.873
042612	P59-2	11.46	19.725	8.265
042612	P59-3	11.46	16.658	5.198
042612	P59-4	11.46	17.101	5.641
042612	P59-5	11.46	15.675	4.215
042612	P59-6	11.46	12.656	1.196
042612	P59-7	11.46	16.068	4.608
042612	P59-8	11.46	14.900	3.440
042612	P60-1	11.46	13.510	2.050
042612	P60-2	11.46	16.231	4.771
042612	P60-3	11.46	16.231	4.771
042612	P60-4	11.46	11.737	.277
042612	P60-5	11.46	12.321	.861
042612	P60-6	11.46	13.549	2.089
042612	P60-7	11.46	11.542	.082
042612	P60-8	11.46	11.548	.088
042612	P61-1	11.46	15.138	3.678
042612	P61-2	11.46	15.552	4.092
042612	P61-3	11.46	13.982	2.522
042612	P61-4	11.46	16.759	5.299
042612	P61-5	11.46	13.344	1.884
042612	P61-6	11.46	16.937	5.477
042612	P61-7	11.46	17.103	5.643
042612	P61-8	11.46	15.943	4.483
042612	P16-1	11.46	43.584	32.124
042612	P16-2	11.46	39.577	28.117
042612	P16-3	11.46	204.449	192.989
042612	P16-4	11.46	77.547	66.087
042612	P16-5	11.46	198.484	187.024
042612	P16-6	11.46	97.497	86.037
042612	P16-7	11.46	136.976	125.516
042612	P16-8	11.46	95.733	84.273

45. TEF D

46. SELECT CA041

PARAMETER TABLE CA041 LOADED.

47. READ BCD DATA ON E

TEST ID	PIU-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042013	P1-1	11.38	17.995	6.615
042013	P1-2	11.38	16.389	5.509
042013	P1-3	11.38	15.932	4.552
042013	P1-4	11.38	20.069	8.689
042013	P1-5	11.38	15.645	4.265
042013	P1-6	11.38	17.350	6.470
042013	P1-7	11.38	17.862	6.482
042013	P1-8	11.38	14.085	2.705
042013	P2-1	11.38	14.723	3.343
042013	P2-2	11.38	13.165	1.785
042013	P2-3	11.38	13.038	1.658
042013	P2-4	11.38	15.393	4.013
042013	P2-5	11.38	17.893	6.513
042013	P2-6	11.38	13.966	2.586
042013	P2-7	11.38	15.165	3.785
042013	P2-8	11.38	8.731	-2.649
042013	P3-1	11.38	14.913	3.533
042013	P3-2	11.38	19.517	8.137
042013	P3-3	11.38	22.755	11.375
042013	P3-4	11.38	20.289	8.909
042013	P3-5	11.38	44.364	32.984
042013	P3-6	11.38	25.410	14.030
042013	P3-7	11.38	29.893	18.513
042013	P3-8	11.38	17.834	6.454
042013	P4-1	11.38	1479.557	1468.177
042013	P4-2	11.38	740.050	728.670
042013	P4-3	11.38	279.341	267.961
042013	P4-4	11.38	418.881	407.501
042013	P4-5	11.38	276.536	265.156
042013	P4-6	11.38	235.476	224.096
042013	P4-7	11.38	268.965	257.585
042013	P4-8	11.38	134.834	123.454
042013	P5-1	11.38	609.974	598.594
042013	P5-2	11.38	356.360	344.980
042013	P5-3	11.38	388.125	376.745
042013	P5-4	11.38	407.883	396.503
042013	P5-5	11.38	267.039	255.659
042013	P5-6	11.38	227.688	216.308
042013	P5-7	11.38	152.275	140.895
042013	P5-8	11.38	137.529	126.149
042013	P6-1	11.38	36.371	24.991
042013	P6-2	11.38	97.719	86.339
042013	P6-3	11.38	246.843	235.463
042013	P6-4	11.38	436.037	424.657
042013	P6-5	11.38	355.367	343.987
042013	P6-6	11.38	219.076	207.696
042013	P6-7	11.38	172.870	161.490
042013	P6-8	11.38	136.917	125.537
042013	P7-1	11.38	50.825	39.445
042013	P7-2	11.38	116.183	104.803
042013	P7-3	11.38	87.333	75.953
042013	P7-4	11.38	60.063	48.683
042013	P7-5	11.38	44.662	33.282
042013	P7-6	11.38	87.940	76.560
042013	P7-7	11.38	93.586	82.206
042013	P7-8	11.38	115.200	103.820
042013	P8-1	11.38	17.810	6.430
042013	P8-2	11.38	19.336	7.956
042013	P8-3	11.38	21.430	10.050
042013	P8-4	11.38	27.604	16.424
042013	P8-5	11.38	52.702	41.322
042013	P8-6	11.38	35.582	24.202
042013	P8-7	11.38	108.444	97.064
042013	P8-8	11.38	118.363	106.983
042013	P9-1	11.38	71.174	59.794
042013	P9-2	11.38	57.897	46.517
042013	P9-3	11.38	44.174	32.794
042013	P9-4	11.38	66.331	54.951
042013	P9-5	11.38	70.297	58.917
042013	P9-6	11.38	62.491	51.111
042013	P9-7	11.38	163.824	152.444
042013	P9-8	11.38	60.070	48.690
042013	P10-1	11.38	15.471	4.091
042013	P10-2	11.38	13.427	2.047
042013	P10-3	11.38	12.789	1.409
042013	P10-4	11.38	15.497	4.117
042013	P10-5	11.38	15.447	4.067
042013	P10-6	11.38	14.773	3.393
042013	P10-7	11.38	14.509	3.129
042013	P10-8	11.38	14.409	3.029
042013	P10-1	11.38	37.671	26.291
042013	P10-2	11.38	33.910	22.530
042013	P10-3	11.38	64.061	52.681
042013	P10-4	11.38	47.244	35.864
042013	P10-5	11.38	134.862	123.502
042013	P10-6	11.38	70.880	59.500
042013	P10-7	11.38	145.887	134.507
042013	P10-8	11.38	118.365	106.985

TEST CONDITIONS: FLOW:430GPM INJ:0.09GPM 2% NAN03 TO P14 CASE 18

TEST ID	PIR-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042014	P11-1	11.38	8.850	-2.530
042014	P11-2	11.38	8.225	-3.155
042014	P11-3	11.38	9.435	-1.945
042014	P11-4	11.38	7.500	-3.880
042014	P11-5	11.38	7.003	-4.377
042014	P11-6	11.38	9.165	-2.215
042014	P11-7	11.38	8.180	-3.200
042014	P11-8	11.38	12.994	1.614
042014	P12-1	11.38	10.568	-.812
042014	P12-2	11.38	11.728	.348
042014	P12-3	11.38	13.259	1.879
042014	P12-4	11.38	9.497	-1.883
042014	P12-5	11.38	13.182	1.802
042014	P12-6	11.38	13.115	1.735
042014	P12-7	11.38	13.487	2.107
042014	P12-8	11.38	15.201	3.821
042014	P13-1	11.38	31.698	20.318
042014	P13-2	11.38	36.139	24.759
042014	P13-3	11.38	100.742	89.362
042014	P13-4	11.38	51.019	39.639
042014	P13-5	11.38	49.688	38.308
042014	P13-6	11.38	50.256	38.876
042014	P13-7	11.38	43.066	31.686
042014	P13-8	11.38	22.640	11.260
042014	P15-1	11.38	50.987	39.607
042014	P15-2	11.38	41.983	30.603
042014	P15-3	11.38	194.804	183.424
042014	P15-4	11.38	206.617	195.237
042014	P15-5	11.38	132.226	120.846
042014	P15-6	11.38	136.777	125.397
042014	P15-7	11.38	129.750	118.370
042014	P15-8	11.38	118.393	107.013
042014	P17-1	11.38	26.730	15.350
042014	P17-2	11.38	13.171	1.791
042014	P17-3	11.38	24.774	13.394
042014	P17-4	11.38	25.927	14.547
042014	P17-5	11.38	61.164	49.784
042014	P17-6	11.38	21.928	10.548
042014	P17-7	11.38	90.908	79.528
042014	P17-8	11.38	61.120	49.740
042014	P18-1	11.38	14.467	3.087
042014	P18-2	11.38	13.538	2.158
042014	P18-3	11.38	16.265	4.885
042014	P18-4	11.38	14.412	3.032
042014	P18-5	11.38	18.229	6.849
042014	P18-6	11.38	13.998	2.618
042014	P18-7	11.38	64.518	53.138
042014	P18-8	11.38	43.324	31.944
042014	P19-1	11.38	11.696	.316
042014	P19-2	11.38	13.133	1.753
042014	P19-3	11.38	10.185	-1.195
042014	P19-4	11.38	11.330	-.050
042014	P19-5	11.38	12.721	1.341
042014	P19-6	11.38	10.203	-1.177
042014	P19-7	11.38	28.712	17.332
042014	P19-8	11.38	28.029	16.649
042014	P20-1	11.38	12.044	.664
042014	P20-2	11.38	11.340	-.040
042014	P20-3	11.38	13.079	1.699
042014	P20-4	11.38	11.872	.492
042014	P20-5	11.38	12.733	1.353
042014	P20-6	11.38	13.208	1.826
042014	P20-7	11.38	9.319	-2.061
042014	P20-8	11.38	11.683	.303
042014	P21-1	11.38	8.902	-2.478
042014	P21-2	11.38	8.629	-2.751
042014	P21-3	11.38	10.128	-1.252
042014	P21-4	11.38	6.463	-4.917
042014	P21-5	11.38	10.784	-.596
042014	P21-6	11.38	9.113	-2.267
042014	P21-7	11.38	13.135	1.755
042014	P21-8	11.38	13.516	2.136
042014	P16-1	11.38	33.666	22.286
042014	P16-2	11.38	27.215	15.835
042014	P16-3	11.38	60.838	49.458
042014	P16-4	11.38	37.394	26.014
042014	P16-5	11.38	132.138	120.758
042014	P16-6	11.38	59.967	48.587
042014	P16-7	11.38	129.111	117.731
042014	P16-8	11.38	99.906	88.526

51. TEF D

52. SELECT CA043

PARAMETER TABLE CA043 LOADED.

53. READ BCD DATA ON E

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042015	P22-1	11.36	15.243	3.863
042015	P22-2	11.38	15.467	4.087
042015	P22-3	11.36	23.399	12.019
042015	P22-4	11.38	21.581	10.201
042015	P22-5	11.36	23.013	11.633
042015	P22-6	11.38	19.930	8.550
042015	P22-7	11.36	23.466	12.086
042015	P22-8	11.38	24.784	13.404
042015	P23-1	11.36	34.308	22.926
042015	P23-2	11.38	28.198	16.818
042015	P23-3	11.38	69.480	58.100
042015	P23-4	11.38	94.676	83.296
042015	P23-5	11.38	43.318	31.938
042015	P23-6	11.38	62.377	50.997
042015	P23-7	11.38	53.100	41.720
042015	P23-8	11.38	59.478	48.098
042015	P24-1	11.38	33.072	21.692
042015	P24-2	11.38	33.635	22.255
042015	P24-3	11.38	45.736	34.356
042015	P24-4	11.38	67.902	56.522
042015	P24-5	11.38	92.143	80.763
042015	P24-6	11.38	93.527	82.147
042015	P24-7	11.38	92.715	81.335
042015	P24-8	11.38	32.309	20.929
042015	P25-1	11.38	15.869	5.489
042015	P25-2	11.38	15.613	5.233
042015	P25-3	11.38	15.615	5.235
042015	P25-4	11.38	15.831	4.451
042015	P25-5	11.38	14.450	3.070
042015	P25-6	11.38	19.772	8.392
042015	P25-7	11.36	24.477	13.097
042015	P25-8	11.38	49.193	37.813
042015	P26-1	11.38	19.456	8.076
042015	P26-2	11.38	17.175	5.795
042015	P26-3	11.38	21.980	10.600
042015	P26-4	11.38	21.964	10.584
042015	P26-5	11.38	32.850	21.470
042015	P26-6	11.38	24.975	13.595
042015	P26-7	11.38	45.344	33.964
042015	P26-8	11.38	39.637	28.257
042015	P27-1	11.38	16.150	4.770
042015	P27-2	11.38	15.198	3.818
042015	P27-3	11.38	14.692	3.312
042015	P27-4	11.38	15.881	4.501
042015	P27-5	11.38	15.765	4.385
042015	P27-6	11.38	15.403	4.023
042015	P27-7	11.38	40.201	28.821
042015	P27-8	11.38	24.298	12.918
042015	P28-1	11.38	12.624	1.244
042015	P28-2	11.38	15.871	2.491
042015	P28-3	11.38	12.226	.846
042015	P28-4	11.38	15.981	2.601
042015	P28-5	11.38	15.691	4.311
042015	P28-6	11.38	12.828	1.448
042015	P28-7	11.38	21.409	10.029
042015	P28-8	11.38	17.070	5.690
042015	P29-1	11.38	15.855	4.475
042015	P29-2	11.38	16.058	4.678
042015	P29-3	11.38	17.597	6.217
042015	P29-4	11.38	15.512	4.132
042015	P29-5	11.38	16.761	5.381
042015	P29-6	11.38	15.173	1.793
042015	P29-7	11.38	15.333	3.953
042015	P29-8	11.38	15.996	4.616
042015	P30-1	11.38	21.430	10.050
042015	P30-2	11.38	17.430	6.050
042015	P30-3	11.38	15.955	2.575
042015	P30-4	11.38	16.250	4.870
042015	P30-5	11.38	13.509	7.129
042015	P30-6	11.38	19.564	8.184
042015	P30-7	11.38	16.890	4.510
042015	P30-8	11.38	14.848	3.468
042015	P31-1	11.38	15.401	4.021
042015	P31-2	11.38	16.067	4.687
042015	P31-3	11.38	11.901	.521
042015	P31-4	11.38	12.929	1.549
042015	P31-5	11.38	11.523	.143
042015	P31-6	11.38	14.023	2.643
042015	P31-7	11.38	12.891	1.511
042015	P31-8	11.38	15.207	3.827
042015	P16-1	11.38	35.145	23.765
042015	P16-2	11.38	36.943	19.563
042015	P16-3	11.38	69.581	58.201
042015	P16-4	11.38	46.542	35.162
042015	P16-5	11.38	132.624	121.244
042015	P16-6	11.38	67.081	55.701
042015	P16-7	11.38	157.393	126.013
042015	P16-8	11.38	109.691	98.311

TEST ID	PIA-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042616	P32-1	11.38	12.037	.657
042616	P32-2	11.38	11.903	.523
042616	P32-3	11.38	13.395	2.015
042616	P32-4	11.38	12.656	1.276
042616	P32-5	11.38	13.625	2.245
042616	P32-6	11.38	14.174	2.794
042616	P32-7	11.38	13.556	2.176
042616	P32-8	11.38	14.562	3.182
042616	P33-1	11.38	14.042	2.662
042616	P33-2	11.38	15.729	4.349
042616	P33-3	11.38	17.931	6.551
042616	P33-4	11.38	13.755	2.375
042616	P33-5	11.38	20.155	8.775
042616	P33-6	11.38	19.644	8.264
042616	P33-7	11.38	22.658	11.276
042616	P33-8	11.38	21.222	9.842
042616	P34-1	11.38	19.089	7.709
042616	P34-2	11.38	15.191	3.811
042616	P34-3	11.38	12.610	1.230
042616	P34-4	11.38	12.912	1.532
042616	P34-5	11.38	11.984	.604
042616	P34-6	11.38	13.179	1.799
042616	P34-7	11.38	17.690	6.310
042616	P34-8	11.38	14.794	3.414
042616	P35-1	11.38	10.437	-.943
042616	P35-2	11.38	13.805	2.425
042616	P35-3	11.38	15.606	4.226
042616	P35-4	11.38	16.549	5.169
042616	P35-5	11.38	14.562	3.182
042616	P35-6	11.38	15.723	4.343
042616	P35-7	11.38	17.403	6.023
042616	P35-8	11.38	34.679	23.299
042616	P36-1	11.38	14.834	3.454
042616	P36-2	11.38	13.963	2.583
042616	P36-3	11.38	15.608	4.228
042616	P36-4	11.38	13.792	2.412
042616	P36-5	11.38	19.646	8.266
042616	P36-6	11.38	14.247	2.867
042616	P36-7	11.38	26.031	14.651
042616	P36-8	11.38	17.181	5.801
042616	P37-1	11.38	15.404	4.024
042616	P37-2	11.38	13.359	1.979
042616	P37-3	11.38	13.392	2.012
042616	P37-4	11.38	15.650	4.270
042616	P37-5	11.38	16.454	5.074
042616	P37-6	11.38	11.818	.438
042616	P37-7	11.38	23.723	12.343
042616	P37-8	11.38	17.141	5.761
042616	P38-1	11.38	17.807	6.427
042616	P38-2	11.38	12.595	1.215
042616	P38-3	11.38	16.666	5.286
042616	P38-4	11.38	12.012	.632
042616	P38-5	11.38	15.504	4.124
042616	P38-6	11.38	12.418	1.038
042616	P38-7	11.38	15.180	3.800
042616	P38-8	11.38	13.841	2.461
042616	P40-1	11.38	13.553	2.173
042616	P40-2	11.38	14.755	3.375
042616	P40-3	11.38	14.656	3.276
042616	P40-4	11.38	14.152	2.772
042616	P40-5	11.38	12.569	1.189
042616	P40-6	11.38	12.433	1.053
042616	P40-7	11.38	12.788	1.408
042616	P40-8	11.38	16.854	5.474
042616	P41-1	11.38	14.086	2.706
042616	P41-2	11.38	14.116	2.736
042616	P41-3	11.38	14.641	3.261
042616	P41-4	11.38	12.497	1.117
042616	P41-5	11.38	16.137	4.757
042616	P41-6	11.38	13.738	2.358
042616	P41-7	11.38	13.224	1.844
042616	P41-8	11.38	13.866	2.486
042616	P42-1	11.38	14.199	2.819
042616	P42-2	11.38	14.831	3.451
042616	P42-3	11.38	12.781	1.401
042616	P42-4	11.38	12.131	.751
042616	P42-5	11.38	11.007	-.373
042616	P42-6	11.38	13.586	2.206
042616	P42-7	11.38	14.467	3.087
042616	P42-8	11.38	16.762	5.382
042616	P10-1	11.38	33.635	22.255
042616	P10-2	11.38	32.386	21.006
042616	P10-3	11.38	67.282	55.902
042616	P10-4	11.38	45.798	34.418
042616	P10-5	11.38	137.394	126.014
042616	P10-6	11.38	67.591	56.211
042616	P10-7	11.38	131.826	120.446
042616	P10-8	11.38	107.941	96.561

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042017	P44-1	11.38	12.719	1.339
042017	P44-2	11.38	14.798	3.418
042017	P44-3	11.38	11.713	.333
042017	P44-4	11.38	15.353	3.973
042017	P44-5	11.38	13.417	2.037
042017	P44-6	11.38	16.222	4.842
042017	P44-7	11.38	13.904	2.524
042017	P44-8	11.38	19.708	8.328
042017	P45-1	11.38	11.562	.182
042017	P45-2	11.38	11.152	-.228
042017	P45-3	11.38	12.264	.884
042017	P45-4	11.38	12.111	.731
042017	P45-5	11.38	11.683	.303
042017	P45-6	11.38	12.807	1.427
042017	P45-7	11.38	14.519	3.139
042017	P45-8	11.38	14.778	3.398
042017	P46-1	11.38	14.930	3.550
042017	P46-2	11.38	10.412	-.966
042017	P46-3	11.38	12.229	.849
042017	P46-4	11.38	12.437	1.057
042017	P46-5	11.38	11.905	.525
042017	P46-6	11.38	11.318	-.062
042017	P46-7	11.38	12.442	1.062
042017	P46-8	11.38	11.709	.329
042017	P47-1	11.38	11.136	-.244
042017	P47-2	11.38	13.490	2.110
042017	P47-3	11.38	12.319	.939
042017	P47-4	11.38	12.848	1.468
042017	P47-5	11.38	11.846	.466
042017	P47-6	11.38	14.051	2.671
042017	P47-7	11.38	11.486	.106
042017	P47-8	11.38	10.727	-.653
042017	P48-1	11.38	11.153	-.227
042017	P48-2	11.38	10.547	-.833
042017	P48-3	11.38	11.882	.502
042017	P48-4	11.38	8.925	-2.455
042017	P48-5	11.38	12.038	.658
042017	P48-6	11.38	10.230	-1.150
042017	P48-7	11.38	12.154	.774
042017	P48-8	11.38	11.193	-.187
042017	P49-1	11.38	13.971	2.591
042017	P49-2	11.38	13.302	1.922
042017	P49-3	11.38	13.300	1.920
042017	P49-4	11.38	13.904	2.524
042017	P49-5	11.38	13.604	2.224
042017	P49-6	11.38	11.367	.007
042017	P49-7	11.38	12.064	.684
042017	P49-8	11.38	12.993	1.613
042017	P50-1	11.38	14.840	3.460
042017	P50-2	11.38	12.762	1.382
042017	P50-3	11.38	14.515	3.135
042017	P50-4	11.38	12.864	1.484
042017	P50-5	11.38	14.582	3.202
042017	P50-6	11.38	13.344	1.964
042017	P50-7	11.38	12.859	1.479
042017	P50-8	11.38	13.999	2.619
042017	P51-1	11.38	12.702	1.322
042017	P51-2	11.38	12.307	.927
042017	P51-3	11.38	12.771	1.391
042017	P51-4	11.38	13.693	2.313
042017	P51-5	11.38	11.045	-.335
042017	P51-6	11.38	13.001	1.621
042017	P51-7	11.38	11.274	-.106
042017	P51-8	11.38	14.272	2.892
042017	P52-1	11.38	16.799	5.419
042017	P52-2	11.38	12.532	1.152
042017	P52-3	11.38	12.582	1.202
042017	P52-4	11.38	12.391	1.011
042017	P52-5	11.38	14.676	3.296
042017	P52-6	11.38	13.070	1.690
042017	P52-7	11.38	12.462	1.082
042017	P52-8	11.38	13.556	2.176
042017	P53-1	11.38	16.664	5.284
042017	P53-2	11.38	16.782	5.402
042017	P53-3	11.38	14.229	2.849
042017	P53-4	11.38	16.345	4.965
042017	P53-5	11.38	13.330	1.950
042017	P53-6	11.38	13.137	1.757
042017	P53-7	11.38	15.727	4.347
042017	P53-8	11.38	16.652	5.272
042017	P10-1	11.38	36.632	25.252
042017	P10-2	11.38	31.855	20.475
042017	P10-3	11.38	64.373	52.993
042017	P10-4	11.38	44.817	33.437
042017	P10-5	11.38	121.127	109.747
042017	P10-6	11.38	66.445	55.065
042017	P10-7	11.38	135.141	123.761
042017	P10-8	11.38	105.788	94.408

TEST CONDITIONS: FLOW:430GPM INJ:0.09GPM 2% NANO3 TO P14 CASE 18

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042018	P54-1	11.38	16.246	4.866
042018	P54-2	11.38	18.133	6.753
042018	P54-3	11.38	17.258	5.878
042018	P54-4	11.38	18.838	7.458
042018	P54-5	11.38	17.403	6.023
042018	P54-6	11.38	20.094	8.714
042018	P54-7	11.38	13.655	2.275
042018	P54-8	11.38	18.674	7.294
042018	P55-1	11.38	13.991	2.611
042018	P55-2	11.38	16.943	5.563
042018	P55-3	11.38	14.152	2.772
042018	P55-4	11.38	16.991	5.611
042018	P55-5	11.38	14.266	2.886
042018	P55-6	11.38	15.445	4.065
042018	P55-7	11.38	16.573	5.193
042018	P55-8	11.38	14.095	2.715
042018	P56-1	11.38	17.372	5.992
042018	P56-2	11.38	15.283	3.903
042018	P56-3	11.38	17.174	5.794
042018	P56-4	11.38	14.547	3.167
042018	P56-5	11.38	20.633	9.253
042018	P56-6	11.38	19.671	8.291
042018	P56-7	11.38	18.656	7.276
042018	P56-8	11.38	13.582	2.202
042018	P57-1	11.38	15.781	4.401
042018	P57-2	11.38	15.183	3.803
042018	P57-3	11.38	14.319	2.939
042018	P57-4	11.38	14.483	3.103
042018	P57-5	11.38	15.094	3.714
042018	P57-6	11.38	13.279	1.899
042018	P57-7	11.38	15.988	4.608
042018	P57-8	11.38	12.899	1.519
042018	P58-1	11.38	15.464	4.084
042018	P58-2	11.38	14.647	3.267
042018	P58-3	11.38	14.810	3.430
042018	P58-4	11.38	14.043	2.663
042018	P58-5	11.38	14.083	2.703
042018	P58-6	11.38	14.520	3.140
042018	P58-7	11.38	15.366	3.986
042018	P58-8	11.38	14.865	3.485
042018	P59-1	11.38	23.339	11.959
042018	P59-2	11.38	23.199	11.819
042018	P59-3	11.38	18.169	6.789
042018	P59-4	11.38	20.218	8.838
042018	P59-5	11.38	17.685	6.305
042018	P59-6	11.38	16.551	5.171
042018	P59-7	11.38	18.145	6.765
042018	P59-8	11.38	17.869	6.489
042018	P60-1	11.38	15.000	3.620
042018	P60-2	11.38	18.230	6.850
042018	P60-3	11.38	18.230	6.850
042018	P60-4	11.38	13.539	2.159
042018	P60-5	11.38	13.864	2.484
042018	P60-6	11.38	15.994	4.614
042018	P60-7	11.38	13.092	1.712
042018	P60-8	11.38	13.165	1.785
042018	P61-1	11.38	18.841	7.461
042018	P61-2	11.38	17.947	6.567
042018	P61-3	11.38	16.192	4.812
042018	P61-4	11.38	18.755	7.375
042018	P61-5	11.38	15.425	4.045
042018	P61-6	11.38	18.972	7.592
042018	P61-7	11.38	21.037	9.657
042018	P61-8	11.38	18.095	6.715
042018	P16-1	11.38	38.704	27.324
042018	P16-2	11.38	35.966	24.586
042018	P16-3	11.38	70.498	59.118
042018	P16-4	11.38	46.427	35.047
042018	P16-5	11.38	136.855	125.475
042018	P16-6	11.38	68.723	57.343
042018	P16-7	11.38	137.076	125.696
042018	P16-8	11.38	111.082	99.702

63. TEF D

64. SELECT CAD41

PARAMETER TABLE CAD41 LOADED.

65. READ BCU DATA ON E

TEST ID	PIH-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042019	P1-1	11.35	7.678	-3.672
042019	P1-2	11.35	7.478	-3.872
042019	P1-3	11.35	14.428	3.070
042019	P1-4	11.35	8.573	-2.777
042019	P1-5	11.35	8.071	-3.279
042019	P1-6	11.35	6.078	-5.272
042019	P1-7	11.35	11.356	.006
042019	P1-8	11.35	7.972	-3.378
042019	P2-1	11.35	12.119	.769
042019	P2-2	11.35	6.920	-4.430
042019	P2-3	11.35	8.220	-3.130
042019	P2-4	11.35	11.021	-.329
042019	P2-5	11.35	14.755	3.405
042019	P2-6	11.35	10.875	-.475
042019	P2-7	11.35	11.431	.081
042019	P2-8	11.35	11.889	.539
042019	P3-1	11.35	9.641	-1.709
042019	P3-2	11.35	7.529	-3.821
042019	P3-3	11.35	9.169	-2.181
042019	P3-4	11.35	8.510	-2.840
042019	P3-5	11.35	10.405	-.945
042019	P3-6	11.35	8.045	-2.505
042019	P3-7	11.35	9.627	-1.723
042019	P3-8	11.35	9.123	-2.227
042019	P4-1	11.35	5.350	-6.000
042019	P4-2	11.35	6.803	-4.547
042019	P4-3	11.35	3.357	-7.993
042019	P4-4	11.35	6.029	-5.321
042019	P4-5	11.35	6.176	-5.174
042019	P4-6	11.35	6.831	-4.519
042019	P4-7	11.35	6.946	-4.404
042019	P4-8	11.35	3.839	-7.511
042019	P5-1	11.35	4.223	-7.127
042019	P5-2	11.35	1.587	-9.763
042019	P5-3	11.35	2.076	-9.274
042019	P5-4	11.35	5.575	-5.775
042019	P5-5	11.35	3.173	-8.177
042019	P5-6	11.35	7.474	-3.876
042019	P5-7	11.35	9.845	-1.505
042019	P5-8	11.35	6.862	-4.480
042019	P6-1	11.35	6.438	-4.912
042019	P6-2	11.35	5.517	-5.833
042019	P6-3	11.35	7.918	-3.432
042019	P6-4	11.35	7.918	-3.432
042019	P6-5	11.35	8.059	-3.291
042019	P6-6	11.35	4.106	-7.244
042019	P6-7	11.35	4.132	-7.210
042019	P6-8	11.35	8.438	-2.912
042019	P7-1	11.35	7.197	-4.153
042019	P7-2	11.35	12.958	1.606
042019	P7-3	11.35	4.339	-7.011
042019	P7-4	11.35	8.559	-2.791
042019	P7-5	11.35	5.883	-5.467
042019	P7-6	11.35	8.111	-3.239
042019	P7-7	11.35	2.010	-9.340
042019	P7-8	11.35	9.795	-1.555
042019	P8-1	11.35	9.305	-2.045
042019	P8-2	11.35	6.272	-5.078
042019	P8-3	11.35	6.736	-4.614
042019	P8-4	11.35	4.636	-6.714
042019	P8-5	11.35	8.673	-2.677
042019	P8-6	11.35	8.887	-2.463
042019	P8-7	11.35	2.576	-8.774
042019	P8-8	11.35	6.066	-5.284
042019	P9-1	11.35	101.326	89.970
042019	P9-2	11.35	111.972	100.622
042019	P9-3	11.35	66.343	54.993
042019	P9-4	11.35	116.819	105.469
042019	P9-5	11.35	120.853	109.503
042019	P9-6	11.35	108.491	97.141
042019	P9-7	11.35	140.313	128.963
042019	P9-8	11.35	208.411	197.061
042019	P10-1	11.35	8.193	-3.157
042019	P10-2	11.35	6.843	-4.507
042019	P10-3	11.35	8.192	-3.158
042019	P10-4	11.35	7.569	-3.781
042019	P10-5	11.35	8.093	-3.257
042019	P10-6	11.35	10.842	-.508
042019	P10-7	11.35	9.304	-2.046
042019	P10-8	11.35	6.787	-4.563
042019	P10-1	11.35	15.012	3.662
042019	P10-2	11.35	43.069	31.719
042019	P10-3	11.35	11.851	.501
042019	P10-4	11.35	19.794	8.444
042019	P10-5	11.35	15.559	4.209
042019	P10-6	11.35	44.518	33.160
042019	P10-7	11.35	27.293	15.943
042019	P10-8	11.35	44.135	32.785

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042020	P11-1	11.35	9.859	-1.491
042020	P11-2	11.35	9.971	-1.379
042020	P11-3	11.35	11.034	-.310
042020	P11-4	11.35	8.896	-2.454
042020	P11-5	11.35	9.284	-2.060
042020	P11-6	11.35	10.411	-.939
042020	P11-7	11.35	9.636	-1.714
042020	P11-8	11.35	12.751	1.401
042020	P12-1	11.35	11.007	-.343
042020	P12-2	11.35	12.333	.983
042020	P12-3	11.35	13.345	1.995
042020	P12-4	11.35	10.974	-.376
042020	P12-5	11.35	10.507	-.843
042020	P12-6	11.35	12.369	1.019
042020	P12-7	11.35	10.378	-.972
042020	P12-8	11.35	9.420	-1.930
042020	P13-1	11.35	13.049	1.699
042020	P13-2	11.35	12.137	.787
042020	P13-3	11.35	12.937	1.587
042020	P13-4	11.35	11.276	-.074
042020	P13-5	11.35	13.294	1.944
042020	P13-6	11.35	11.611	.261
042020	P13-7	11.35	14.224	2.874
042020	P13-8	11.35	12.305	.955
042020	P15-1	11.35	14.660	3.310
042020	P15-2	11.35	13.218	1.860
042020	P15-3	11.35	14.383	3.033
042020	P15-4	11.35	13.107	1.757
042020	P15-5	11.35	16.921	5.571
042020	P15-6	11.35	14.269	2.919
042020	P15-7	11.35	20.782	9.432
042020	P15-8	11.35	17.108	5.750
042020	P17-1	11.35	14.340	2.990
042020	P17-2	11.35	11.856	.500
042020	P17-3	11.35	13.980	2.630
042020	P17-4	11.35	19.732	8.382
042020	P17-5	11.35	16.508	5.150
042020	P17-6	11.35	24.751	13.401
042020	P17-7	11.35	18.351	7.601
042020	P17-8	11.35	31.555	20.205
042020	P10-1	11.35	13.933	2.583
042020	P10-2	11.35	11.752	.402
042020	P10-3	11.35	14.794	3.444
042020	P10-4	11.35	10.664	-.606
042020	P10-5	11.35	12.916	1.560
042020	P10-6	11.35	13.104	1.754
042020	P10-7	11.35	13.898	2.548
042020	P10-8	11.35	20.595	9.245
042020	P19-1	11.35	10.180	-1.170
042020	P19-2	11.35	12.592	1.242
042020	P19-3	11.35	11.507	.157
042020	P19-4	11.35	11.365	.015
042020	P19-5	11.35	11.474	.124
042020	P19-6	11.35	11.117	-.233
042020	P19-7	11.35	10.843	-.507
042020	P19-8	11.35	11.427	.077
042020	P20-1	11.35	13.662	2.312
042020	P20-2	11.35	13.788	2.438
042020	P20-3	11.35	13.988	2.638
042020	P20-4	11.35	15.115	3.765
042020	P20-5	11.35	14.387	3.037
042020	P20-6	11.35	14.514	3.164
042020	P20-7	11.35	11.329	-.021
042020	P20-8	11.35	12.862	1.512
042020	P21-1	11.35	11.885	.535
042020	P21-2	11.35	11.517	.167
042020	P21-3	11.35	12.505	1.155
042020	P21-4	11.35	10.011	-1.339
042020	P21-5	11.35	12.544	1.194
042020	P21-6	11.35	11.289	-.061
042020	P21-7	11.35	14.156	2.806
042020	P21-8	11.35	14.193	2.843
042020	P10-1	11.35	16.400	5.050
042020	P10-2	11.35	52.748	41.398
042020	P10-3	11.35	16.335	4.985
042020	P10-4	11.35	21.832	10.482
042020	P10-5	11.35	21.058	9.700
042020	P10-6	11.35	44.616	33.260
042020	P10-7	11.35	25.491	14.141
042020	P10-8	11.35	41.481	30.131

11. TEF D

12. SELECT CA043

PARAMETER TABLE CA043 LOADED.

13. READ BCD DATA ON E

TEST ID	PII-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042021	P22-1	11.35	11.637	.287
042021	P22-2	11.35	10.023	-1.327
042021	P22-3	11.35	12.792	1.442
042021	P22-4	11.35	10.447	-.903
042021	P22-5	11.35	13.769	2.419
042021	P22-6	11.35	11.316	-.034
042021	P22-7	11.35	17.968	6.618
042021	P22-8	11.35	16.777	5.427
042021	P23-1	11.35	36.350	25.000
042021	P23-2	11.35	21.625	10.275
042021	P23-3	11.35	20.743	9.393
042021	P23-4	11.35	16.494	5.144
042021	P23-5	11.35	38.382	27.032
042021	P23-6	11.35	29.569	18.219
042021	P23-7	11.35	44.559	33.209
042021	P23-8	11.35	34.815	23.465
042021	P24-1	11.35	82.555	71.205
042021	P24-2	11.35	35.548	24.198
042021	P24-3	11.35	36.746	25.396
042021	P24-4	11.35	30.212	18.862
042021	P24-5	11.35	52.998	41.648
042021	P24-6	11.35	22.926	11.576
042021	P24-7	11.35	27.917	16.567
042021	P24-8	11.35	13.201	1.851
042021	P25-1	11.35	104.991	93.641
042021	P25-2	11.35	535.964	524.614
042021	P25-3	11.35	410.202	398.852
042021	P25-4	11.35	132.429	171.079
042021	P25-5	11.35	190.214	178.864
042021	P25-6	11.35	188.330	176.980
042021	P25-7	11.35	158.298	146.948
042021	P25-8	11.35	122.034	110.684
042021	P26-1	11.35	25.429	14.079
042021	P26-2	11.35	49.616	38.266
042021	P26-3	11.35	25.118	13.768
042021	P26-4	11.35	42.138	30.788
042021	P26-5	11.35	38.852	27.502
042021	P26-6	11.35	53.304	41.954
042021	P26-7	11.35	47.279	35.929
042021	P26-8	11.35	62.672	51.322
042021	P27-1	11.35	15.967	4.617
042021	P27-2	11.35	14.243	2.893
042021	P27-3	11.35	19.248	7.398
042021	P27-4	11.35	28.152	16.802
042021	P27-5	11.35	21.994	10.644
042021	P27-6	11.35	40.286	28.936
042021	P27-7	11.35	33.500	22.150
042021	P27-8	11.35	50.813	39.463
042021	P28-1	11.35	10.091	-1.259
042021	P28-2	11.35	10.656	-.694
042021	P28-3	11.35	10.362	-.988
042021	P28-4	11.35	11.751	.401
042021	P28-5	11.35	12.567	1.217
042021	P28-6	11.35	12.148	.798
042021	P28-7	11.35	13.312	1.962
042021	P28-8	11.35	18.178	6.828
042021	P29-1	11.35	12.628	1.278
042021	P29-2	11.35	12.099	.749
042021	P29-3	11.35	13.240	1.890
042021	P29-4	11.35	11.467	.117
042021	P29-5	11.35	15.323	4.473
042021	P29-6	11.35	9.977	-1.373
042021	P29-7	11.35	11.525	.175
042021	P29-8	11.35	12.254	.904
042021	P30-1	11.35	19.097	7.747
042021	P30-2	11.35	14.725	3.375
042021	P30-3	11.35	12.209	.859
042021	P30-4	11.35	12.965	1.615
042021	P30-5	11.35	15.722	4.372
042021	P30-6	11.35	17.429	6.079
042021	P30-7	11.35	15.215	3.865
042021	P30-8	11.35	12.319	.969
042021	P31-1	11.35	12.047	.697
042021	P31-2	11.35	13.516	2.166
042021	P31-3	11.35	10.469	-.881
042021	P31-4	11.35	10.846	-.504
042021	P31-5	11.35	10.284	-1.068
042021	P31-6	11.35	12.608	1.258
042021	P31-7	11.35	11.230	-.120
042021	P31-8	11.35	12.976	1.626
042021	P16-1	11.35	12.693	1.343
042021	P16-2	11.35	30.114	18.764
042021	P16-3	11.35	16.029	4.679
042021	P16-4	11.35	15.773	4.423
042021	P16-5	11.35	17.366	6.016
042021	P16-6	11.35	42.001	30.651
042021	P16-7	11.35	22.765	11.415
042021	P16-8	11.35	38.649	27.299

TEST ID	PIR-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042022	P32-1	11.35	13.603	2.253
042022	P32-2	11.35	13.112	1.762
042022	P32-3	11.35	13.668	2.318
042022	P32-4	11.35	12.315	.965
042022	P32-5	11.35	17.097	5.747
042022	P32-6	11.35	14.565	3.215
042022	P32-7	11.35	18.613	7.263
042022	P32-8	11.35	16.722	5.372
042022	P33-1	11.35	19.062	7.732
042022	P33-2	11.35	25.414	14.064
042022	P33-3	11.35	28.879	17.529
042022	P33-4	11.35	17.755	6.405
042022	P33-5	11.35	22.765	11.435
042022	P33-6	11.35	27.212	15.862
042022	P33-7	11.35	42.278	30.928
042022	P33-8	11.35	30.352	19.002
042022	P34-1	11.35	1736.614	1725.264
042022	P34-2	11.35	304.467	593.117
042022	P34-3	11.35	178.063	166.713
042022	P34-4	11.35	451.752	440.402
042022	P34-5	11.35	205.557	194.207
042022	P34-6	11.35	225.916	214.566
042022	P34-7	11.35	232.871	221.521
042022	P34-8	11.35	74.448	63.098
042022	P35-1	11.35	74.448	63.098
042022	P35-2	11.35	606.533	595.183
042022	P35-3	11.35	342.288	330.938
042022	P35-4	11.35	264.072	252.722
042022	P35-5	11.35	174.516	163.166
042022	P35-6	11.35	207.397	196.047
042022	P35-7	11.35	224.790	213.440
042022	P35-8	11.35	140.414	129.064
042022	P36-1	11.35	237.632	226.282
042022	P36-2	11.35	151.371	140.021
042022	P36-3	11.35	179.108	167.758
042022	P36-4	11.35	267.219	255.869
042022	P36-5	11.35	150.750	139.400
042022	P36-6	11.35	176.255	164.905
042022	P36-7	11.35	112.458	101.108
042022	P36-8	11.35	128.906	117.556
042022	P37-1	11.35	23.526	12.176
042022	P37-2	11.35	16.757	5.407
042022	P37-3	11.35	56.944	45.594
042022	P37-4	11.35	71.076	59.726
042022	P37-5	11.35	107.141	95.791
042022	P37-6	11.35	78.404	67.054
042022	P37-7	11.35	106.221	94.871
042022	P37-8	11.35	101.924	90.574
042022	P38-1	11.35	19.541	8.191
042022	P38-2	11.35	14.796	3.446
042022	P38-3	11.35	18.009	6.659
042022	P38-4	11.35	19.121	7.771
042022	P38-5	11.35	19.641	8.291
042022	P38-6	11.35	24.752	13.402
042022	P38-7	11.35	33.460	22.050
042022	P38-8	11.35	49.236	37.886
042022	P40-1	11.35	9.461	-1.889
042022	P40-2	11.35	11.967	.617
042022	P40-3	11.35	9.055	-2.295
042022	P40-4	11.35	8.584	-2.766
042022	P40-5	11.35	12.357	1.007
042022	P40-6	11.35	8.673	-2.677
042022	P40-7	11.35	11.251	-.099
042022	P40-8	11.35	12.265	.935
042022	P41-1	11.35	13.559	2.209
042022	P41-2	11.35	12.738	1.388
042022	P41-3	11.35	15.904	4.554
042022	P41-4	11.35	12.755	1.405
042022	P41-5	11.35	19.142	7.792
042022	P41-6	11.35	16.025	4.675
042022	P41-7	11.35	21.331	9.981
042022	P41-8	11.35	27.388	16.038
042022	P42-1	11.35	26.106	14.756
042022	P42-2	11.35	45.569	34.219
042022	P42-3	11.35	43.252	31.902
042022	P42-4	11.35	48.151	36.801
042022	P42-5	11.35	122.555	111.205
042022	P42-6	11.35	97.604	86.254
042022	P42-7	11.35	69.798	58.448
042022	P42-8	11.35	80.840	69.490
042022	P10-1	11.35	14.218	2.868
042022	P10-2	11.35	40.075	28.725
042022	P10-3	11.35	16.378	5.028
042022	P10-4	11.35	16.311	4.661
042022	P10-5	11.35	18.273	6.923
042022	P10-6	11.35	39.751	28.401
042022	P10-7	11.35	22.374	11.024
042022	P10-8	11.35	39.420	28.070

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042023	P44-1	11.35	55.262	43.912
042023	P44-2	11.35	55.585	44.235
042023	P44-3	11.35	43.371	32.021
042023	P44-4	11.35	220.673	209.323
042023	P44-5	11.35	222.960	211.610
042023	P44-6	11.35	127.427	116.077
042023	P44-7	11.35	135.648	124.298
042023	P44-8	11.35	138.143	126.793
042023	P45-1	11.35	43.520	32.170
042023	P45-2	11.35	27.199	15.849
042023	P45-3	11.35	111.684	100.334
042023	P45-4	11.35	97.162	85.832
042023	P45-5	11.35	104.781	93.431
042023	P45-6	11.35	89.303	77.953
042023	P45-7	11.35	112.885	101.535
042023	P45-8	11.35	86.767	75.417
042023	P46-1	11.35	24.612	13.262
042023	P46-2	11.35	17.588	6.238
042023	P46-3	11.35	17.112	5.762
042023	P46-4	11.35	20.123	8.773
042023	P46-5	11.35	18.968	7.618
042023	P46-6	11.35	24.266	12.916
042023	P46-7	11.35	40.283	28.933
042023	P46-8	11.35	21.325	9.975
042023	P47-1	11.35	11.460	.110
042023	P47-2	11.35	13.680	2.330
042023	P47-3	11.35	12.311	.961
042023	P47-4	11.35	13.705	2.355
042023	P47-5	11.35	13.359	2.009
042023	P47-6	11.35	14.184	2.834
042023	P47-7	11.35	16.247	4.897
042023	P47-8	11.35	14.847	3.497
042023	P48-1	11.35	14.755	3.405
042023	P48-2	11.35	15.268	3.918
042023	P48-3	11.35	17.308	6.458
042023	P48-4	11.35	14.646	3.296
042023	P48-5	11.35	18.852	7.502
042023	P48-6	11.35	19.249	7.899
042023	P48-7	11.35	26.545	15.195
042023	P48-8	11.35	35.426	24.076
042023	P49-1	11.35	26.107	14.757
042023	P49-2	11.35	32.693	21.343
042023	P49-3	11.35	51.432	40.082
042023	P49-4	11.35	110.060	98.650
042023	P49-5	11.35	52.020	40.670
042023	P49-6	11.35	57.365	46.015
042023	P49-7	11.35	63.045	51.695
042023	P49-8	11.35	68.011	56.661
042023	P50-1	11.35	39.412	28.062
042023	P50-2	11.35	42.203	30.853
042023	P50-3	11.35	76.484	65.134
042023	P50-4	11.35	94.139	82.789
042023	P50-5	11.35	131.008	119.658
042023	P50-6	11.35	75.676	64.326
042023	P50-7	11.35	113.740	102.390
042023	P50-8	11.35	89.506	78.156
042023	P51-1	11.35	27.829	16.479
042023	P51-2	11.35	27.320	15.970
042023	P51-3	11.35	49.757	38.407
042023	P51-4	11.35	35.042	23.692
042023	P51-5	11.35	90.838	79.488
042023	P51-6	11.35	73.993	62.643
042023	P51-7	11.35	103.641	92.291
042023	P51-8	11.35	90.798	79.448
042023	P52-1	11.35	19.465	8.115
042023	P52-2	11.35	19.491	8.141
042023	P52-3	11.35	14.559	3.209
042023	P52-4	11.35	18.329	6.979
042023	P52-5	11.35	23.660	12.310
042023	P52-6	11.35	26.351	15.001
042023	P52-7	11.35	42.496	31.146
042023	P52-8	11.35	47.368	36.018
042023	P53-1	11.35	17.906	6.556
042023	P53-2	11.35	16.611	5.261
042023	P53-3	11.35	13.915	2.565
042023	P53-4	11.35	16.799	5.449
042023	P53-5	11.35	13.492	2.142
042023	P53-6	11.35	13.288	1.938
042023	P53-7	11.35	19.338	7.988
042023	P53-8	11.35	18.156	6.806
042023	P16-1	11.35	15.391	4.041
042023	P16-2	11.35	43.026	31.676
042023	P16-3	11.35	17.280	5.930
042023	P16-4	11.35	18.551	7.201
042023	P16-5	11.35	20.420	9.070
042023	P16-6	11.35	41.313	29.963
042023	P16-7	11.35	23.714	12.364
042023	P16-8	11.35	39.142	27.792

TEST CONDITIONS: FLOW:430GPM INJ:0.09GPM 2% NAN03 TO P43 CASE 19

TEST ID	PIN-SENSOR	BASE CONCENTRATION PPM	AVERAGE CONCENTRATION PPM	INCREMENTAL CONCENTRATION PPM
042024	P54-1	11.35	12.499	1.149
042024	P54-2	11.35	15.843	4.493
042024	P54-3	11.35	15.465	4.115
042024	P54-4	11.35	19.690	8.340
042024	P54-5	11.35	17.650	6.300
042024	P54-6	11.35	19.157	7.807
042024	P54-7	11.35	22.122	10.772
042024	P54-8	11.35	26.048	14.698
042024	P55-1	11.35	17.784	6.434
042024	P55-2	11.35	18.792	7.442
042024	P55-3	11.35	23.821	12.471
042024	P55-4	11.35	23.063	11.713
042024	P55-5	11.35	32.950	21.600
042024	P55-6	11.35	27.268	15.918
042024	P55-7	11.35	44.684	33.334
042024	P55-8	11.35	40.240	28.890
042024	P56-1	11.35	20.351	9.001
042024	P56-2	11.35	19.955	8.605
042024	P56-3	11.35	25.180	13.830
042024	P56-4	11.35	17.865	6.515
042024	P56-5	11.35	66.747	55.397
042024	P56-6	11.35	54.210	42.860
042024	P56-7	11.35	95.780	84.430
042024	P56-8	11.35	24.893	13.543
042024	P57-1	11.35	14.833	3.483
042024	P57-2	11.35	14.894	3.544
042024	P57-3	11.35	13.938	2.588
042024	P57-4	11.35	16.858	5.508
042024	P57-5	11.35	18.658	7.308
042024	P57-6	11.35	17.423	6.073
042024	P57-7	11.35	35.673	24.323
042024	P57-8	11.35	32.186	20.836
042024	P58-1	11.35	11.634	.284
042024	P58-2	11.35	12.905	1.555
042024	P58-3	11.35	12.219	.869
042024	P58-4	11.35	12.785	1.435
042024	P58-5	11.35	12.336	.936
042024	P58-6	11.35	14.003	2.653
042024	P58-7	11.35	14.629	3.279
042024	P58-8	11.35	12.992	1.642
042024	P59-1	11.35	13.074	1.724
042024	P59-2	11.35	10.913	-.437
042024	P59-3	11.35	13.803	2.453
042024	P59-4	11.35	12.847	1.497
042024	P59-5	11.35	10.567	-.783
042024	P59-6	11.35	14.938	3.588
042024	P59-7	11.35	17.708	6.358
042024	P59-8	11.35	14.882	3.532
042024	P60-1	11.35	14.527	3.177
042024	P60-2	11.35	19.782	8.432
042024	P60-3	11.35	24.392	13.042
042024	P60-4	11.35	16.524	5.174
042024	P60-5	11.35	15.149	3.799
042024	P60-6	11.35	15.129	3.779
042024	P60-7	11.35	21.410	10.060
042024	P60-8	11.35	16.277	4.927
042024	P61-1	11.35	13.996	2.646
042024	P61-2	11.35	14.964	3.614
042024	P61-3	11.35	14.032	2.682
042024	P61-4	11.35	15.016	3.666
042024	P61-5	11.35	14.592	3.242
042024	P61-6	11.35	17.278	5.928
042024	P61-7	11.35	23.156	11.806
042024	P61-8	11.35	20.567	9.217
042024	P10-1	11.35	16.777	5.427
042024	P10-2	11.35	31.627	20.277
042024	P10-3	11.35	18.289	6.939
042024	P10-4	11.35	19.039	7.689
042024	P10-5	11.35	20.492	9.142
042024	P10-6	11.35	43.873	32.523
042024	P10-7	11.35	23.687	12.337
042024	P10-8	11.35	41.491	30.141

23. TEF C

24. TRI C

25. TRI E

END OF DATA PROCESSING ROUTINE.

TABLE A-IV

AXIAL GRAB SAMPLE DATA

Run	Location-(Corres Conductivity Probe)	Concentration (Grab Sample)		Concentration (Conductivity Probe)	
		ppm	$\frac{(Cm)_m}{(Cm)_{inj}}$	ppm	$\frac{(Cm)_m}{(Cm)_{inj}}$
17	5 - 1	58	.062	380	.404
	5 - 2	98	.104	122	.130
	5 - 3	63	.067	80	.085
	5 - 4	64	.068	88	.093
	5 - 5	8	.008	54	.057
	6 - 5	227	.241	374	.397
	6 - 7	43	.046	122	.130
	6 - 8	12	.013	70	.074
18	5 - 1	1	0	599	.636
	5 - 2	432	.459	345	.367
	5 - 3	306	.325	377	.400
	5 - 4	232	.246	397	.421
	5 - 5	62	.066	256	.272
	6 - 5	388	.412	344	.365
	6 - 7	149	.158	161	.171
	6 - 8	48	.051	125	.132

Figure A-2. Pin Details for 217-Pin Assembly

1/8 IN. DOWNSTREAM OF END OF
FINNED REGION
OBSERVER IS LOOKING DOWNSTREAM

NOTE: INJECTION LOCATIONS 3 IN.
UPSTREAM

A-107

Figure A-4 a. Instrumentation Layout

A-108

Figure A-4 b. Instrumentation Layout

A-109

Figure A-4 c. Instrumentation Layout

6 IN. BELOW FINNED REGION

Figure A-4 d. Instrumentation Layout

9 IN. DOWNSTREAM FROM END OF
FINNED REGION

Figure A-4 e. Instrumentation Layout

12 IN. BELOW FINNED REGION

Figure A-4 f. Instrumentation Layout

18 IN. DOWNSTREAM FROM END OF
FINNED REGION

Figure A-4 g. Instrumentation Layout

24 IN. BELOW FINNED REGION

Figure A-4 h. Instrumentation Layout

36 IN. BELOW FINNED REGION

W/W POSITION

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Figure A-4 i. Instrumentation Layout

RUN 19 430 gpm
 Inj P43 6 IN. DOWNSTREAM
 $C_{inj} = 2165 \text{ ppm}$ $\sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 1991 \text{ ppm}$

Figure A-5 a. Planar Concentrations, (ppm NaNO_3) Interior Injection, Run # 19

RUN 19 430 gpm

Inj P43 12 IN. DOWNSTREAM

$$C_{inj} = 2165 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 2206 \text{ ppm}$$

Figure A-5 b. Planar Concentrations, (ppm NaNO_3) Interior Injection, Run #19

RUN 19 430 gpm

Inj P43 24 IN. DOWNSTREAM

$$C_{inj} = 2165 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 2288 \text{ ppm}$$

W/W POSITION

A-118

Figure A-5 c. Planar Concentrations, (ppm NaNO_3) Interior Injection, Run # 19

RUN 19 430 gpm

Inj P43 36 IN. DOWNSTREAM

$C_{inj} = 2165 \text{ ppm}$

$$\sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 2370 \text{ ppm}$$

A-119

Figure A-5 d. Planar Concentrations, (ppm NaNO_3) Interior Injection, Run #19

RUN 18 430 gpm

Inj P14 6 IN. DOWNSTREAM

$$C_{inj} = 2165 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 2340 \text{ ppm}$$

Figure A-6 a. Planar Concentrations, (ppm NaNO_3) Injection Near Wall, Run # 18

RUN 18 430 gpm

Inj P14 12 IN. DOWNSTREAM

$$C_{inj} = 2165 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 2855 \text{ ppm}$$

Figure A-6 b. Planar Concentrations, (ppm NaNO_3) Injection Near Wall, Run # 18

RUN 18 430 gpm

Inj P14 24 IN. DOWNSTREAM

$$C_{inj} = 2165 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 2450 \text{ ppm}$$

Figure A-6 c. Planar Concentrations, (ppm NaNO_3) Injection Near Wall, Run # 18

RUN 18 430 gpm

Inj P14 36 IN. DOWNSTREAM

$$C_{inj} = 2165 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 2755 \text{ ppm}$$

W/W POSITION

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Figure A-6 d. Planar Concentrations, (ppm NaNO_3) Injection Near Wall, Run # 18

RUN 2 430 gpm
 Inj LOCATION C 6 IN. DOWNSTREAM
 $C_{inj} = 1802 \text{ ppm}$ $\sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 3246 \text{ ppm}$

Figure A-7 a. Planar Concentrations, (ppm NaNO_3) Wall Injection Run #2

RUN 2 430 gpm

Inj LOCATION C 12 IN. DOWNSTREAM

$$C_{inj} = 4145 \text{ ppm} \quad \sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 4790 \text{ ppm}$$

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Figure A-7 b. Planar Concentrations, (ppm NaNO_3) Wall Injection Run #2

RUN 2 430 gpm

Inj LOCATION C 24 IN. DOWNSTREAM

$C_{inj} = 4145 \text{ ppm}$ $\sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 3833 \text{ ppm}$

Figure A-7 c. Planar Concentrations, (ppm NaNO_3) Wall Injection, Run # 2

RUN 2 430 gpm
 Inj LOCATION C 36 IN. DOWNSTREAM
 $C_{inj} = 4145 \text{ ppm}$ $\sum_n C_n \frac{\dot{m}_n}{\dot{m}_{in}} = 4987 \text{ ppm}$

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Figure A-7 d. Planar Concentrations, (ppm NaNO_3) Wall Injection, Run #2