Test Monitoring Center

6555 Penn Avenue
Pittsburgh, PA 15206-4489
(412) 365-1000

MEMORANDUM: 01-175

DATE: December 3, 2001

TO: Mike Zaiontz,
Chairman, Single Cylinder Diesel Surveillance Panel

FROM: Scott Parke

SUBJECT: 1R Testing from April 1, 2001 through September 30, 2001

Twenty-five calibration tests were reported to the Test Monitoring Center during the period from April 1, 2001 through September 30, 2001. The data from the operationally valid tests is shown on page 8. Following is a summary of testing activity this period.

	Reporting Data	Calibrated on 3-31-00
Number of Labs	5	5
Number of Stands	15	13

Stands reporting data this period were distributed as shown below:

1R LABORATORY / STAND DISTRIBUTION

Report Period: ■ Current
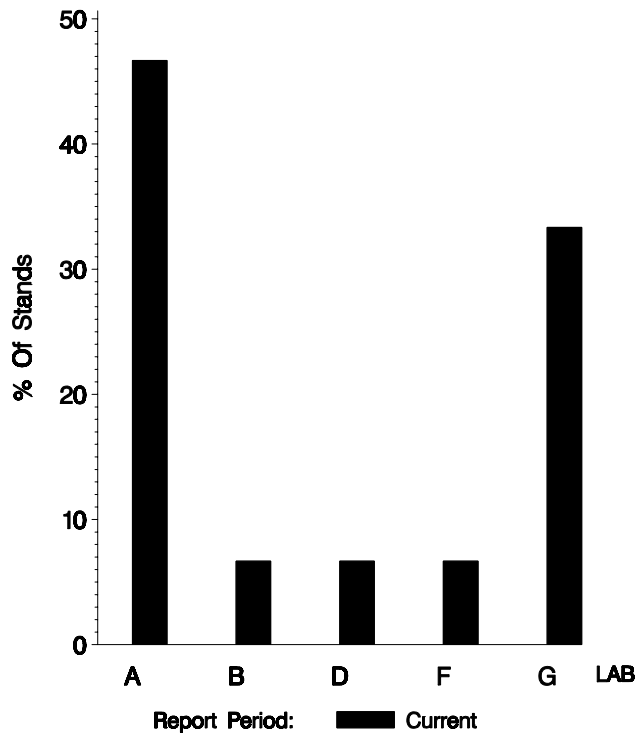
Test Distribution by Oil and Validity

		1005-1	820		Totals Last Period	This Period
		(PC-9M)	(PC-9A)	PC-9D		
Accepted for Calibration (non-TMC)	AO	9	7	2	-	18
Accepted for Calibration	AC	5	0	0	-	5
Rejected Mild	OC	1	0	0	-	1
Rejected Severe	OC	0	0	0	-	0
Rejected for EWMA Precision	OC	0	0	0	-	0
Rejected for Shewhart Precision	OC	0	0	0	-	0
Operationally Invalid (lab)	LC	1	0	0	-	1
Operationally Invalid (lab/TMC)	RC	0	0	0	-	0
Aborted Calibration	XC	0	0	0	-	0
Total		16	7	2	-	25

1R CALIBRATION ATTEMPT SUMMARY
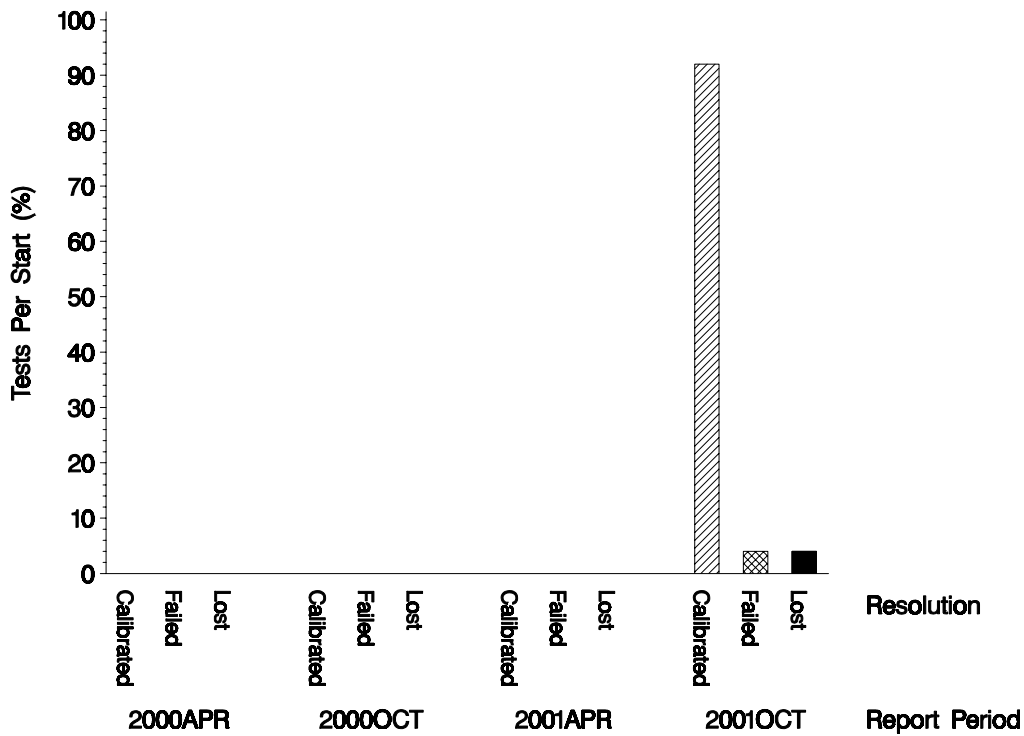
OPERATIONALLY VALID 1R TESTS
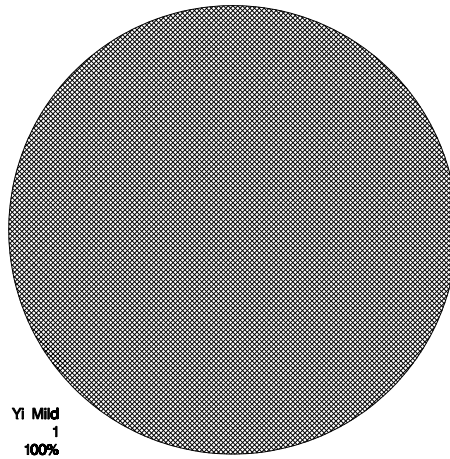## FAILING ACCEPTANCE CRITERIA
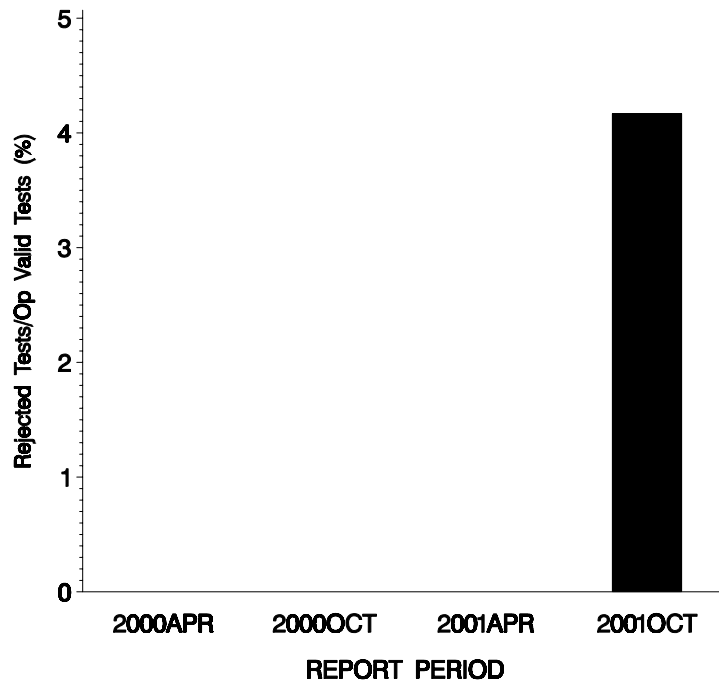
The above chart shows the percentage of failed but operationally valid tests.
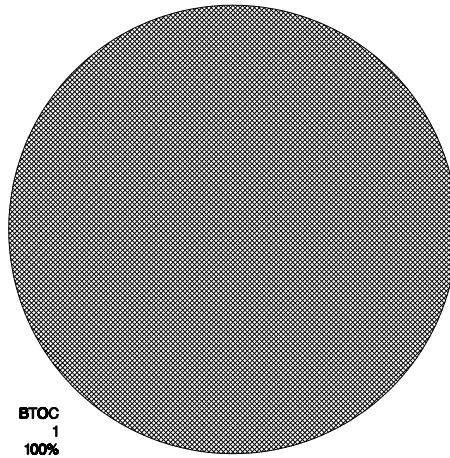
No LTMS deviations were written this period (none have ever been written for this test).

Shown below is the distribution by type and parameter of the alarms causing the failures for this period.

DISTRIBUTION OF 1R
LTMS STAND ALARMS
(By Alarm Type)

Yi Mild
1
100%

DISTRIBUTION OF 1R
LTMS STAND ALARMS
(By Test Parameter)

BTOC
1
100%

One test failed. It was mild on beginning-of-test oil consumption (BTOC).

By lab, the tests run this report period were distributed as shown below:

**NUMBER OF 1R TESTS REPORTED
BY LAB AND REPORT PERIOD**
(All Test Starts − Both Valid & Invalid)
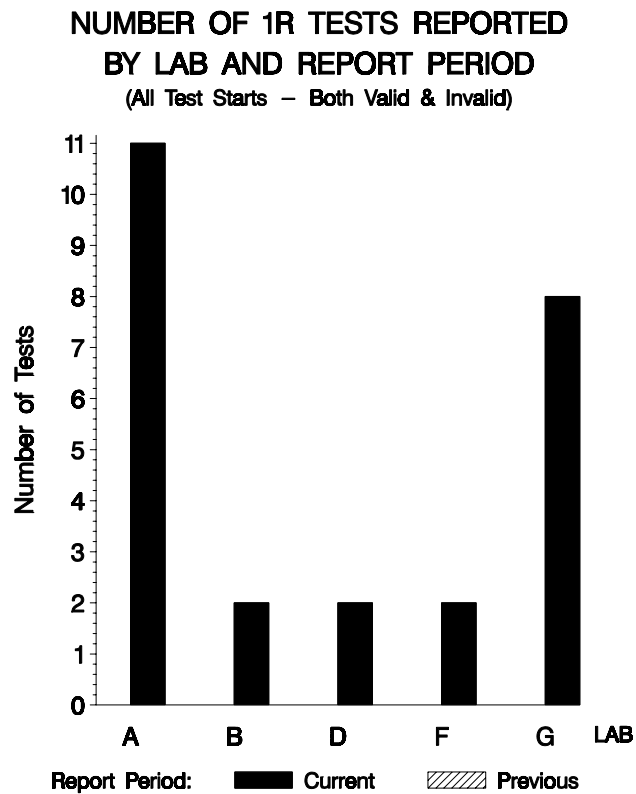
With all operationally invalid tests removed, the distribution looks like this:

**NUMBER OF OPERATIONALLY VALID
1R TESTS REPORTED**
BY LAB AND REPORT PERIOD

And the by-lab distribution of lost tests:
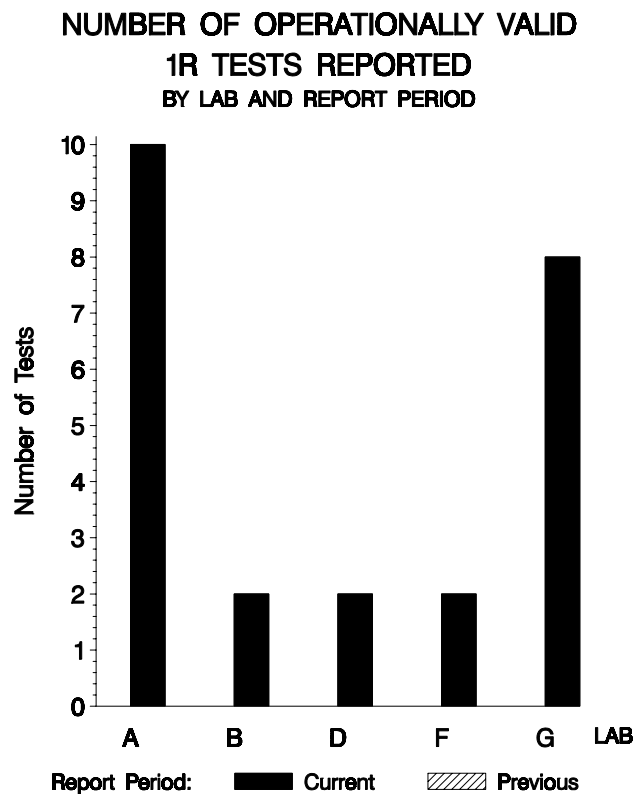
NUMBER OF LOST
1R TESTS REPORTED
BY LAB AND REPORT PERIOD

Report Period: ■ Current ▨ Previous
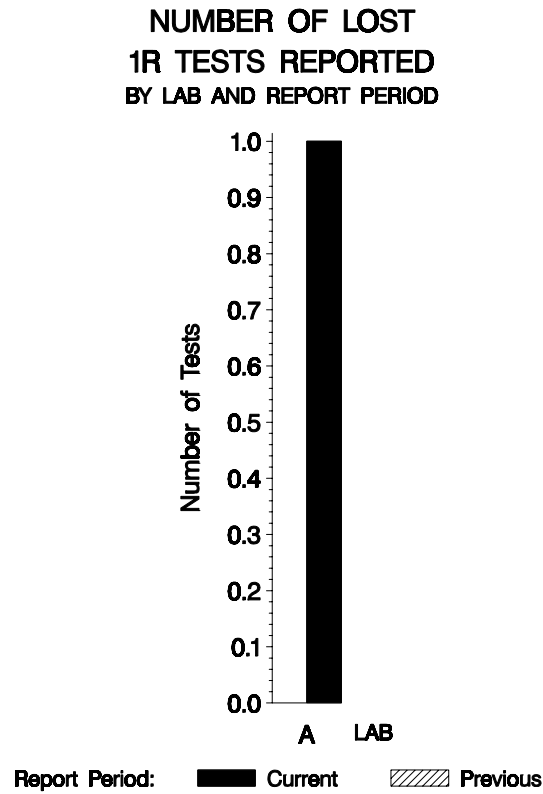
Lost Tests per Start by Oil and Lab

	1005-1 (PC-9M)			820 (PC-9A)			PC-9D			Total		
Lab	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%
A	1	8	13	0	2	0	0	1	0	1	11	9
B	0	1	0	0	1	0				0	2	0
D	0	1	0	0	1	0				0	2	0
F	0	1	0	0	1	0				0	2	0
G	0	5	0	0	2	0	0	1	0	0	8	0
Total	1	16	6	0	7	0	0	2	0	1	25	4

Lost tests are those that were either aborted, rejected by lab, or operationally invalid. One test was classified as lost this period.

Causes for Lost Tests

Lab	Cause	Oil			Validity				Loss Rate		
		1005-1 (PC-9M)	820 (PC-9A)	PC-9D	LC	RC	XC		Lost	Starts	%
A	Scuff caused by loss of boost on cool-down.	●			●				1	11	9%
	Lost	1	0	0	1	0	0				
	Starts	16	7	2	25	25	25				
	%	6%	0%	0%	4%	0%	0%				

Average Δ/s by Lab						
Lab	n	TGC	WDP	TLC	BTOC	EOTOC
A	10	-0.216	0.022	-0.402	0.172	0.075
B	2	1.408	1.000	1.255	0.760	1.327
D	2	-0.389	-0.661	0.125	1.444	0.992
F	2	0.231	0.213	0.222	-1.346	-0.419
G	8	-0.043	-0.164	0.102	-0.385	-0.599
Industry	24	-0.000	0.001	0.000	0.015	-0.010

DATA FROM ALL OPERATIONALLY VALID TESTS REPORTED THIS PERIOD:

LTMS DATE	LAB	STAND	OIL	TG	WD	TL	BTOC	ETOC	TGYI	WDYI	TLYI	BTOC YI	ETOCYI
20010704	A	1	1005-1	51.25	364.6	22.00	10.8	8.5	1.921	1.574	0.601	0.750	0.200
20010705	A	2	1005-1	30.25	350.3	16.50	8.5	6.8	-0.487	0.970	-0.371	-1.167	-1.500
20010707	A	3	PC-9A	43.00	341.2	24.25	10	8.2	0.865	0.000	0.136	1.000	0.115
20010710	F	1	1005-1	46.25	356.7	26.00	7.99	8.5	1.347	1.241	1.307	-1.592	0.200
20010711	G	1	1005-1	47.25	323.2	27.00	11.34	8.1	1.462	-0.173	1.484	1.200	-0.200
20010711	G	3	PC-9A	24.50	310.6	15.00	7.2	5.5	-0.935	-0.845	-0.745	-0.647	-0.923
20010712	B	1	1005-1	46.00	331.3	21.25	11.3	9.3	1.319	0.169	0.468	1.167	1.000
20010712	G	2	1005-1	29.50	356.1	22.75	11.3	9.4	-0.573	1.215	0.733	1.167	1.100
20010731	A	1	PC-9A	33.00	327.8	25.50	8.2	7.5	-0.108	-0.370	0.255	-0.059	-0.154
20010801	A	2	PC-9D	26.00	290.5	7.50	11.6	11.1	-0.708	0.708	-0.707	0.696	0.692
20010802	A	3	1005-1	25.25	301.5	11.50	10.1	8.5	-1.061	-1.089	-1.254	0.167	0.200
20010803	G	1	PC-9A	40.00	371.6	16.00	6.5	6.4	0.573	0.840	-0.650	-1.059	-0.577
20010804	G	2	PC-9D	30.25	281.3	20.00	8.3	9.3	0.704	-0.708	0.707	-0.739	-0.692
20010804	F	1	PC-9A	25.00	311.7	13.75	6.43	5.2	-0.886	-0.815	-0.864	-1.100	-1.038
20010805	G	3	1005-1	29.25	304.9	23.50	9.4	7.5	-0.602	-0.945	0.866	-0.417	-0.800
20010805	D	1	PC-9A	23.75	317.9	21.00	10.8	10.2	-1.008	-0.644	-0.173	1.471	0.885
20010814	B	1	PC-9A	49.50	407.5	44.25	8.9	12.2	1.497	1.831	2.041	0.353	1.654
20010830	A	4	1005-1	31.25	320.6	14.25	10.2	9.6	-0.373	-0.283	-0.769	0.250	1.300
20010902	D	1	1005-1	36.50	311.2	21.00	11.6	9.4	0.229	-0.679	0.424	1.417	1.100
20010915	G	4	1005-1	27.75	307.9	14.00	9	7.1	-0.774	-0.819	-0.813	-0.750	-1.200
20010920	G	5	1005-1	32.75	330.2	14.25	7.7	6.8	-0.201	0.122	-0.769	-1.833	-1.500
20010921	A	6	1005-1	27.75	301.5	9.75	9.9	7.0	-0.774	-1.089	-1.564	0.000	-1.300
20010921	A	7	1005-1	26.25	296.1	12.00	9.8	8.9	-0.946	-1.316	-1.166	-0.083	0.600
20010922	A	5	1005-1	30.25	353.8	23.25	10.1	8.9	-0.487	1.118	0.822	0.167	0.600

DISCUSSION OF INDUSTRY PERFORMANCE OVER THIS PERIOD

Eighteen of the Twenty-five tests reported this period were matrix tests and thus included in target generation. Because of this, all control charting is on-target.
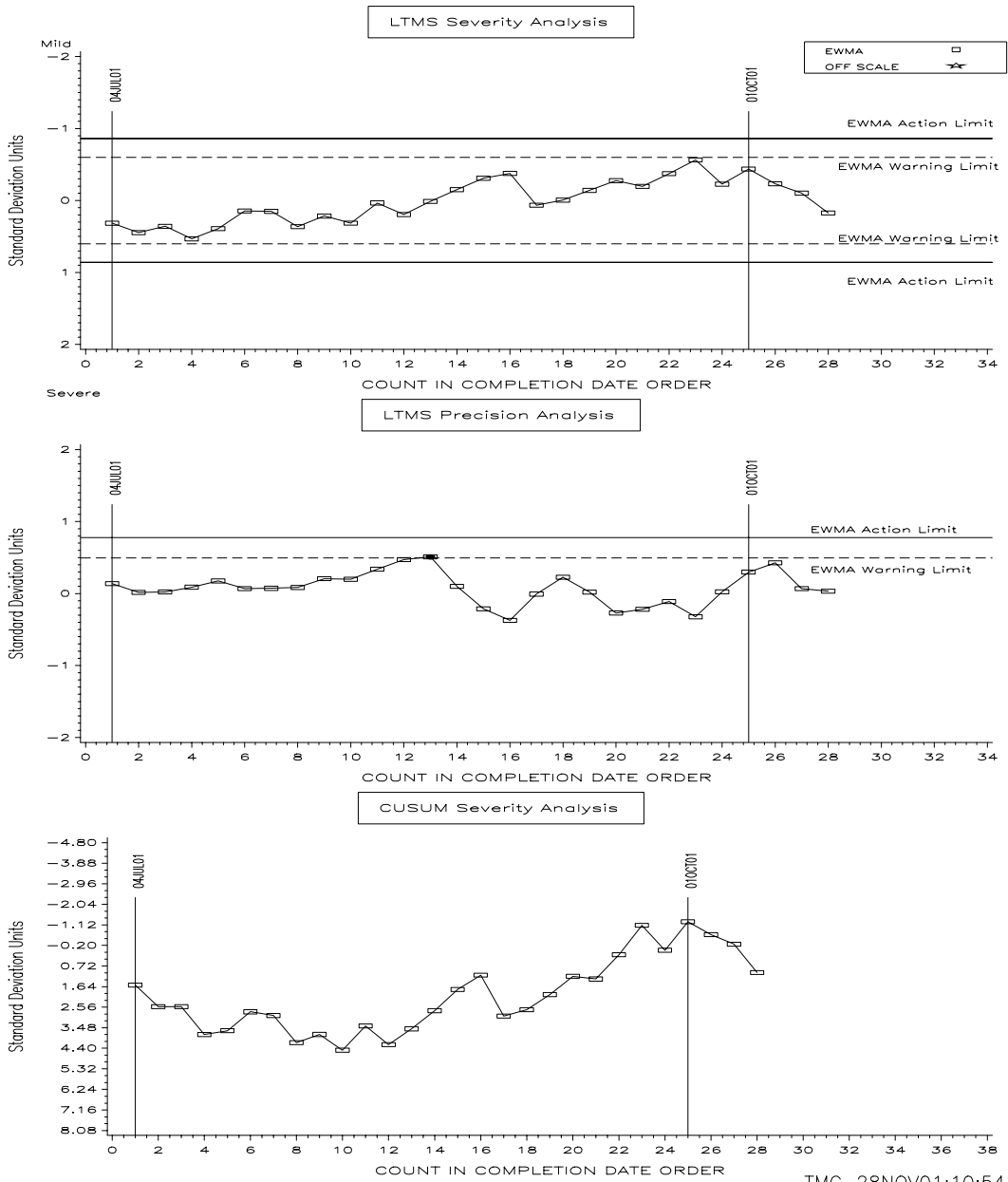
TGC:

1R   INDUSTRY OPERATIONALLY VALID DATA

FINAL TOP GROOVE CARBON (DEMERITS)

TMC 28NOV01:10:55
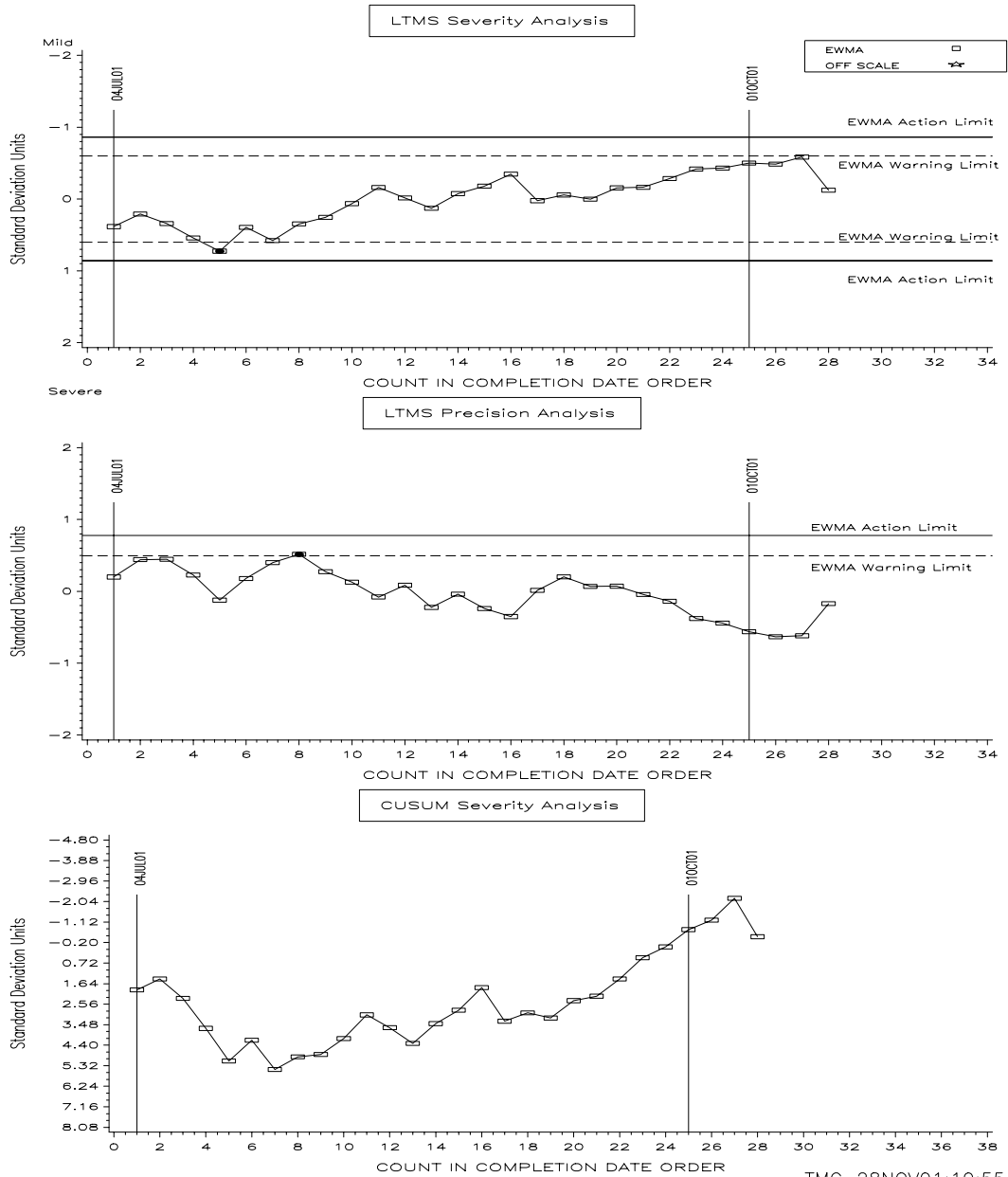
WD:

1R   INDUSTRY OPERATIONALLY VALID DATA

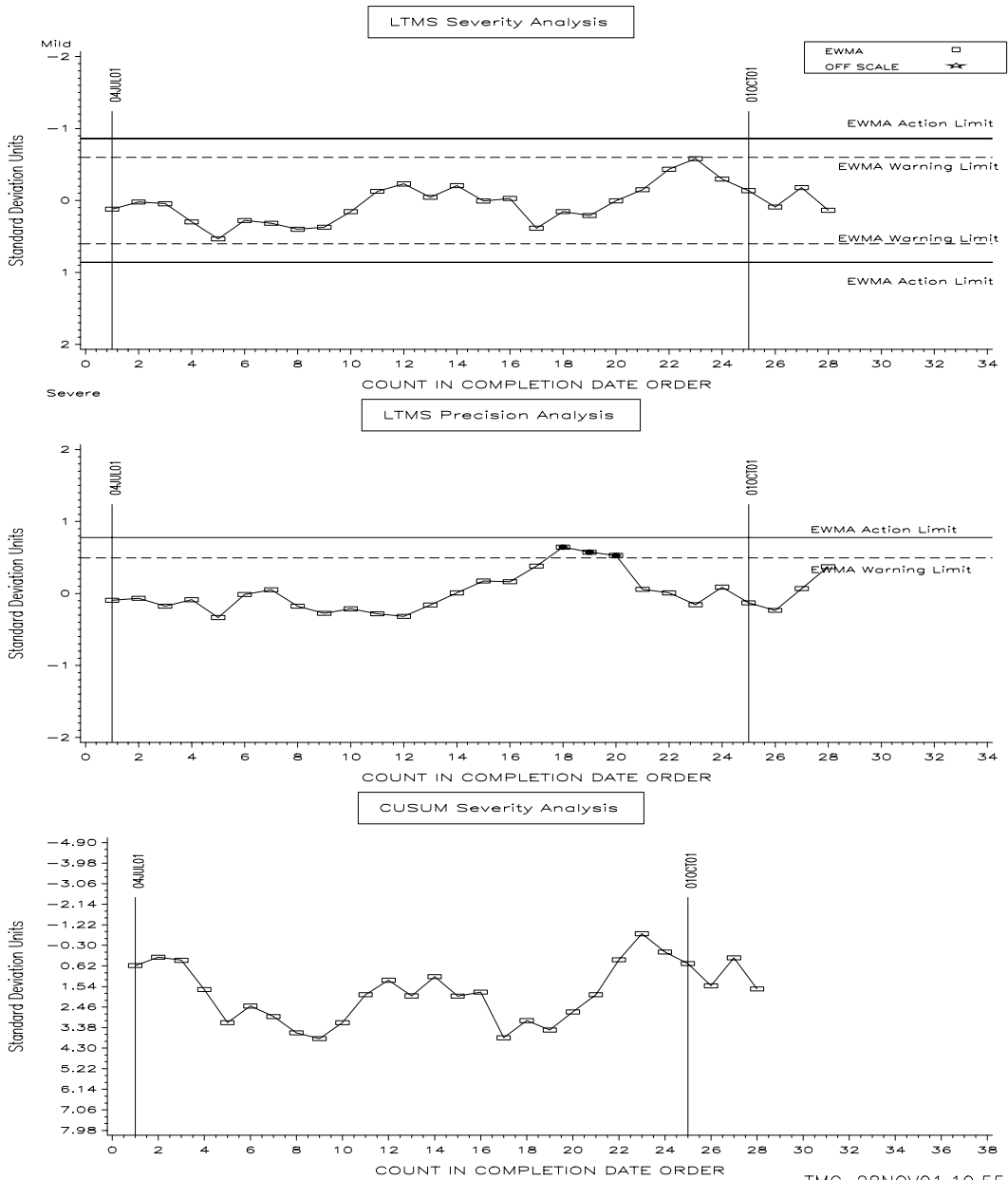### FINAL WEIGHTED TOTAL DEMERITS (DEMERITS)

TLC:

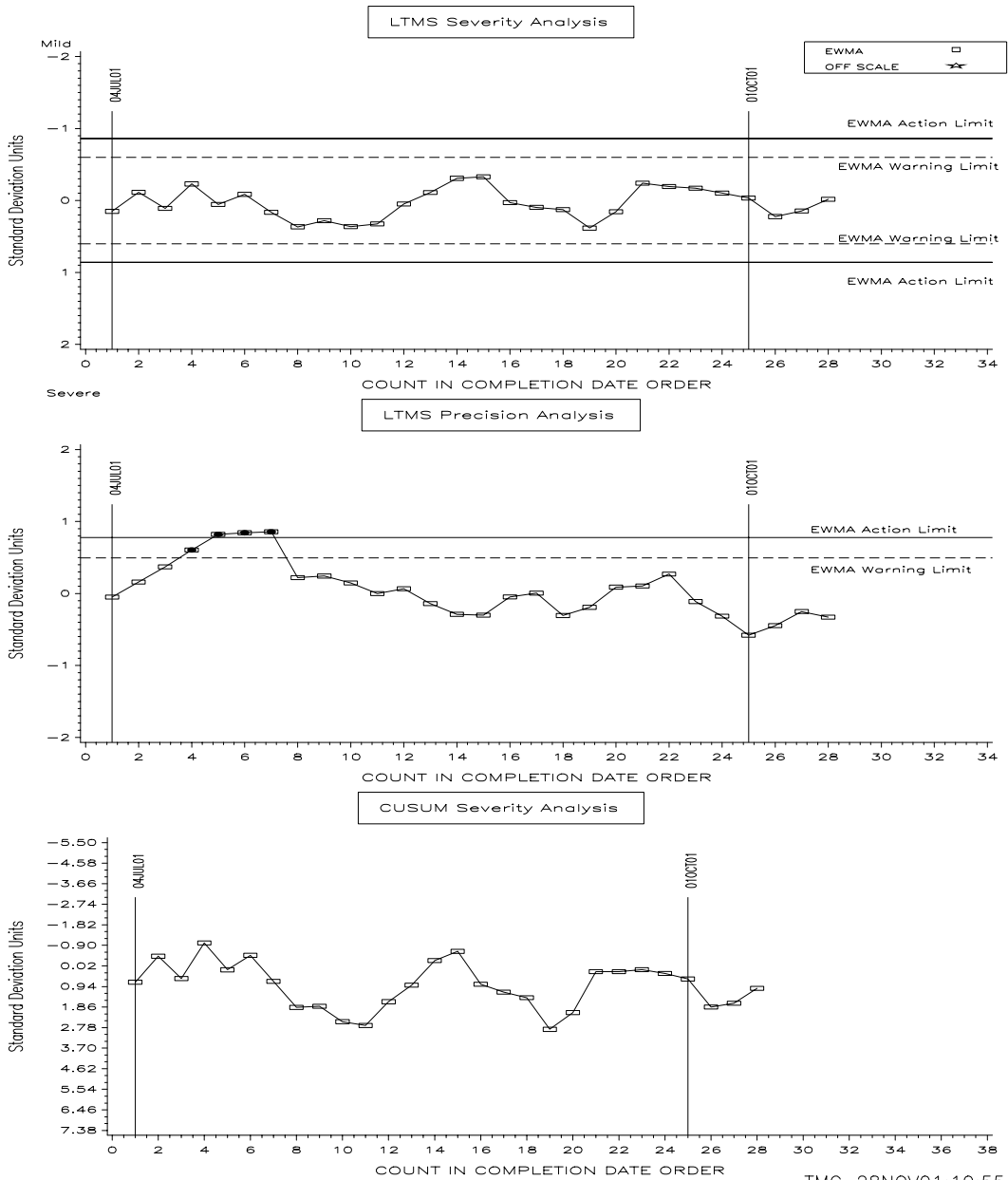## 1R   INDUSTRY OPERATIONALLY VALID DATA

FINAL TOP LAND CARBON (DEMERITS)

TMC 28NOV01:10:55

Beginning of Test Oil Consumption (BTOC):

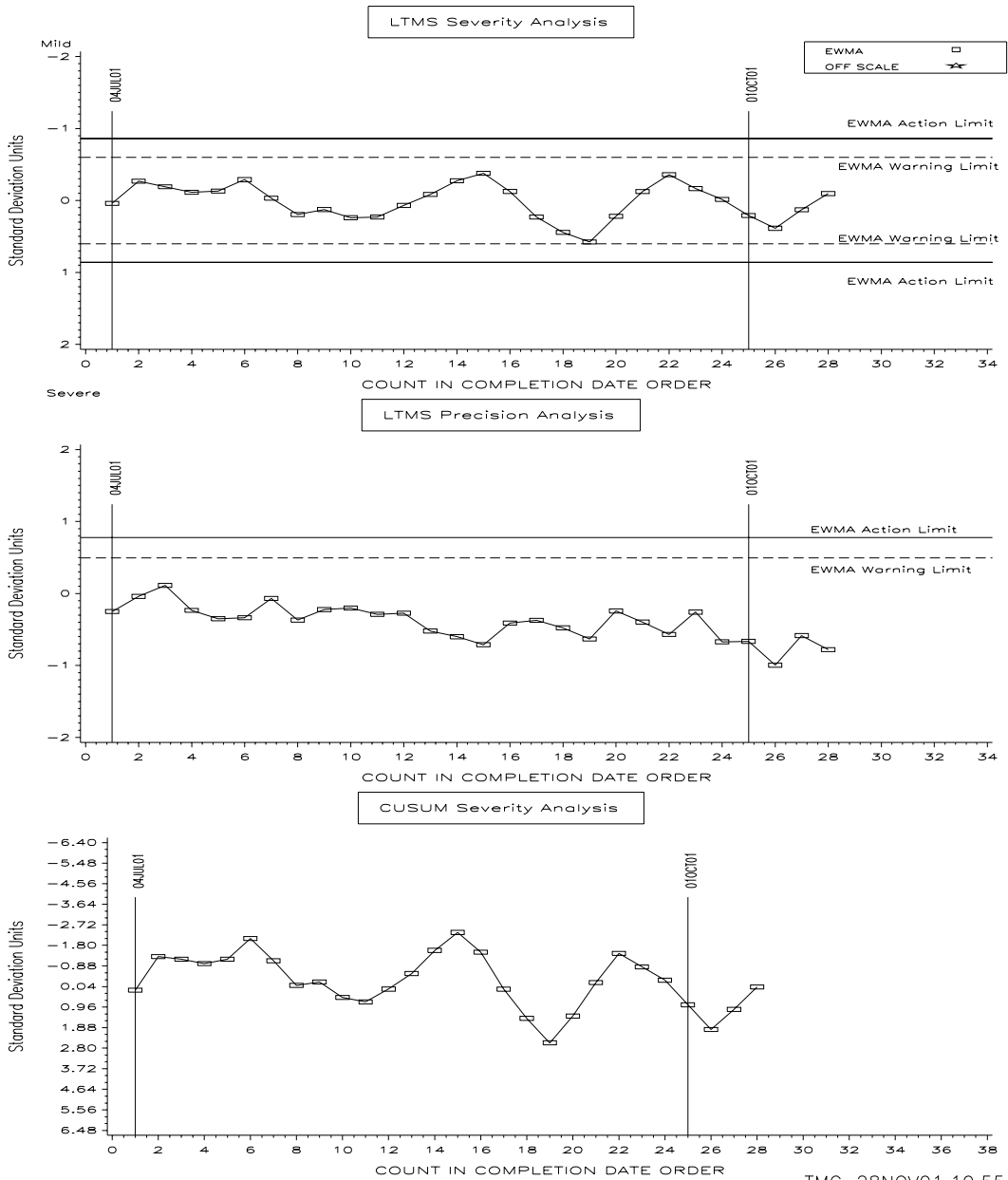1R   INDUSTRY OPERATIONALLY VALID DATA

FINAL BOTOC (g/h)

TMC 28NOV01:10:55
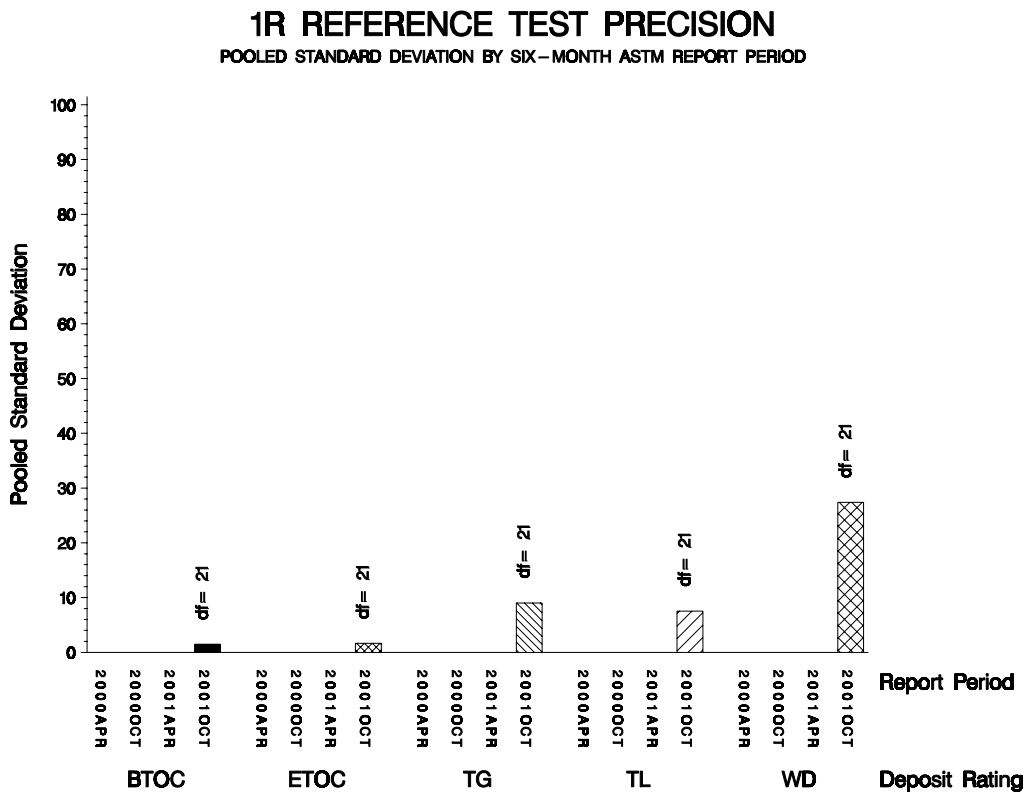
EOT Oil Consumption (ETOC):

1R   INDUSTRY OPERATIONALLY VALID DATA

FINAL EOTOC (g/h)

POOLED S:

Shown below is a bar chart comparing the pooled s values for the 1R test parameters over the last four report periods.

1R REFERENCE TEST PRECISION
POOLED STANDARD DEVIATION BY SIX-MONTH ASTM REPORT PERIOD

STATUS OF REFERENCE OIL SUPPLY:

At the end of this report period, the testing oil supply stood as outlined in the following table:

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
820 (PC-9A)	2	1	18
1005-1	12	38	577
Total	14	39	595

* Future reblends of oils marked with an asterisk are not obtainable by TMC.

Be aware that this table presumes that *all* of each of these oils is dedicated to the 1P test area. All of these oils are also used in the other diesel test areas.

A reblend of 820 has recently been obtained and is expected to be available for calibration use soon.

TIMELINE OF SIGNIFICANT EVENTS IN THE LIFE OF THE 1R TEST:

```
Effective  Info
Date       Letter

20010612              START OF FIRST 1R MATRIX TEST
20010902              END OF LAST 1R MATRIX TEST
20011001              BEGIN REGISTERED TESTING
```

RATING:

During this report period, no 1R tests required re-rating The table below summarizes the re-rates for this report period:

Rating Re-rate Summary

Total number of re-rates requested	0
Number of tests where lab rating was changed	0
Number of tests where referee rating was changed	0
Number of tests where no changes were made	0

LAB VISITS:

During this period, the new 1R installations at 2 labs were examined.

INFORMATION LETTERS:

No information letters were issued this report period.

SUMMARY

-       As eighteen of the twenty-five tests reported this period were matrix tests and contributed to target generation, all parameters remained within acceptable limits for both severity and precision this report period.

SDP/sdp/astm1001.doc/m01-175.sdp.doc

c: J. L. Zalar
        F. M. Farber
        A. C. Hahn
        Single Cylinder Diesel Surveillance Panel
        ftp://tmc.astm.cmri.cmu.edu/docs/diesel/scote/semiannualreports/1r-10-2001.pdf

distribution: Email