



## Test Monitoring Center

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

MEMORANDUM: 05-020

DATE: April 21, 2005

TO: Dale Smith, Chairman, L-33-1 Surveillance Panel

FROM: Donald Lind

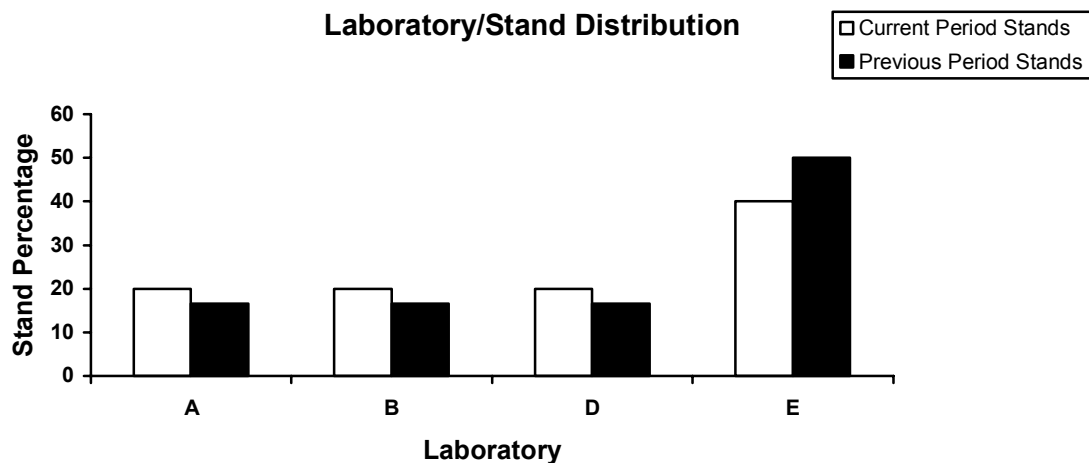
SUBJECT: L-33-1 Reference Test Status from October 1, 2004 through March 31, 2005

The following is a summary of the L-33-1 reference oil tests that were reported to the Test Monitoring Center during the period October 1, 2004 through March 31, 2005.

### Lab and Stand Summary

	Reporting Data	Calibrated as of 3/31/05
Number of Laboratories	4	4
Number of Storage Boxes	10	6

The following chart shows the laboratory/stand distribution:

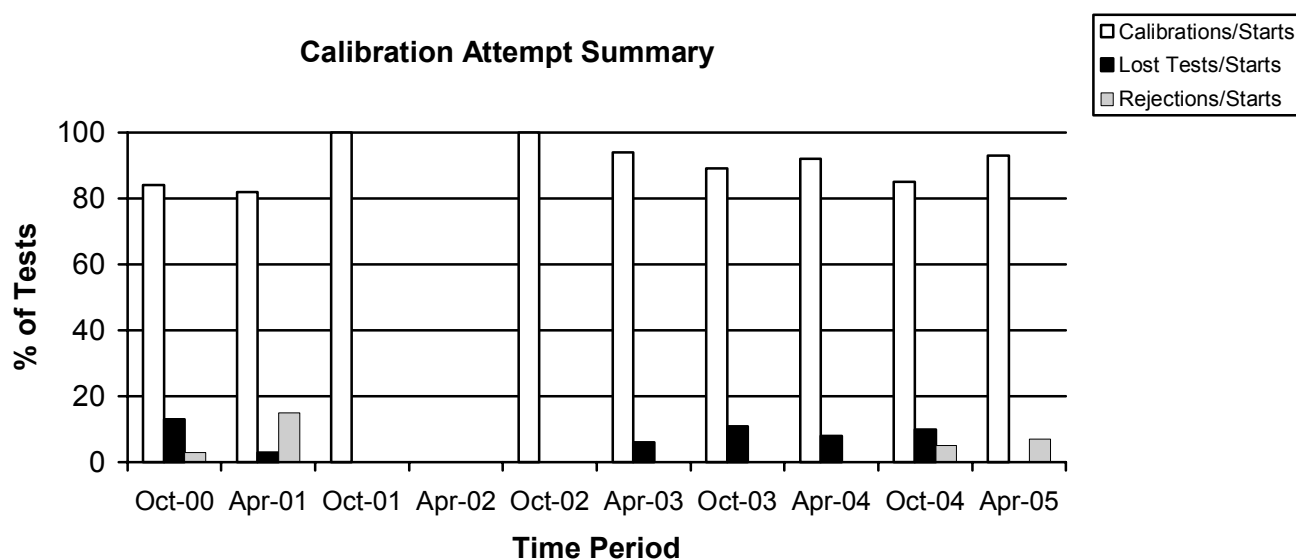


The following summarizes the status of the reference oil tests reported to the TMC:

	TMC Validity Codes	No. of Tests
Operationally and Statistically Acceptable	AC	14
Failed Acceptance Criteria	OC	1
Operationally Invalid (Lab Judgement)	LC	0
Operationally Invalid (Lab / TMC Judgement)	RC	0
Aborted	XC	0
Total		15

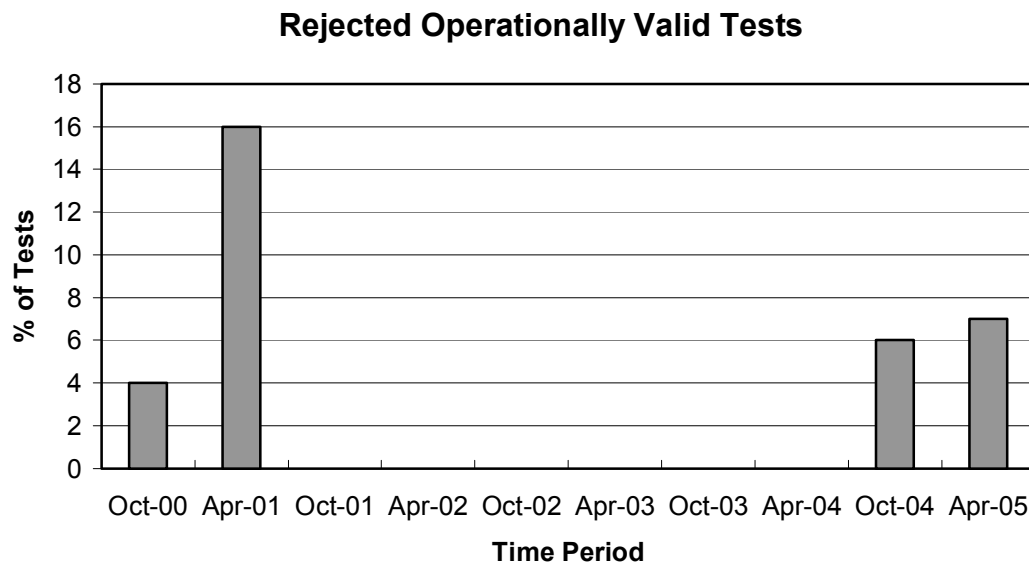
There were no additional tests conducted this report period.

Calibrations per start, lost tests per start and rejection per start rates are summarized below:

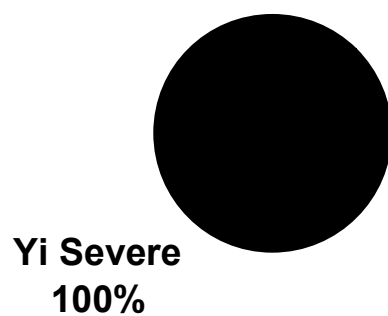


The calibration per start rate and rejected per start rate have increased when compared to the previous period. The lost test per start rate has decreased with respect to the previous period.

One statistically rejected operationally valid test was reported this report period.



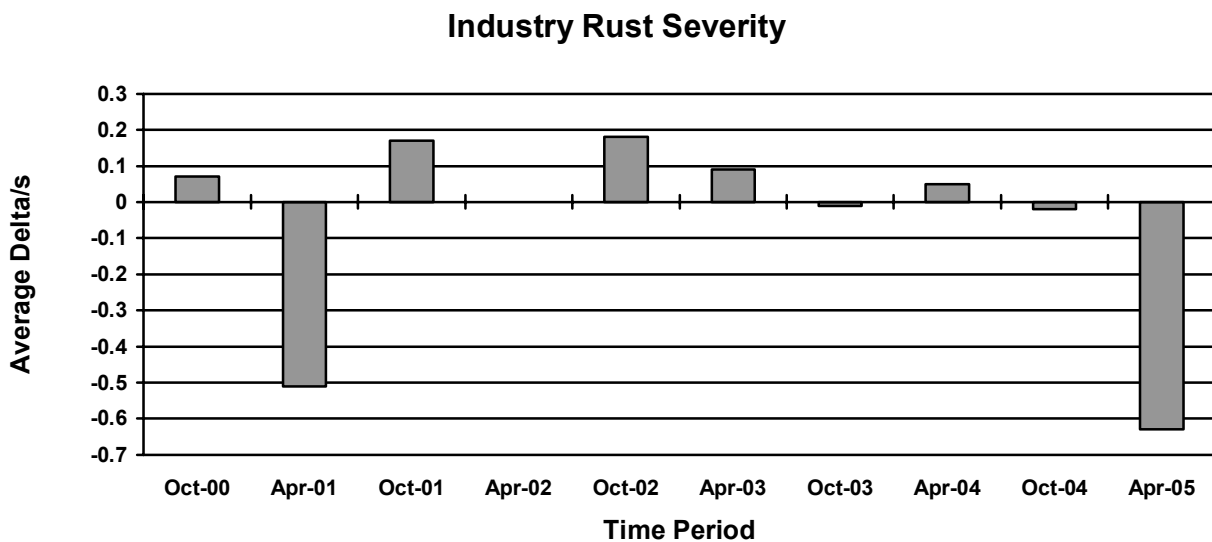
**Distribution of LTMS Stand Alarms**



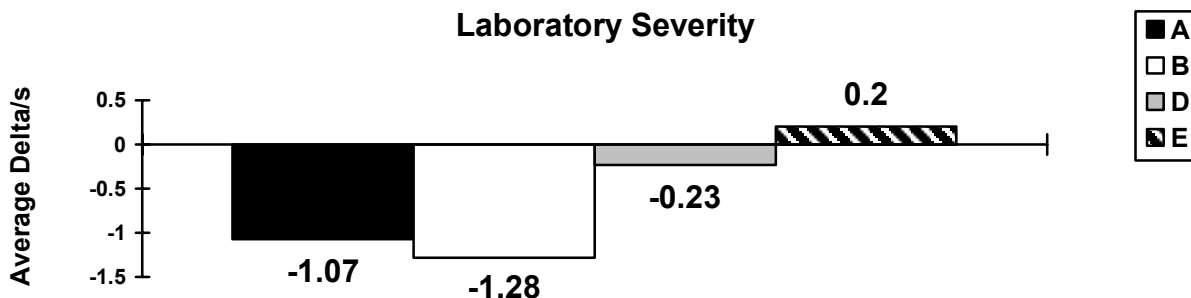
There was one test that failed the acceptance criteria severe this report period.

Severity and Precision

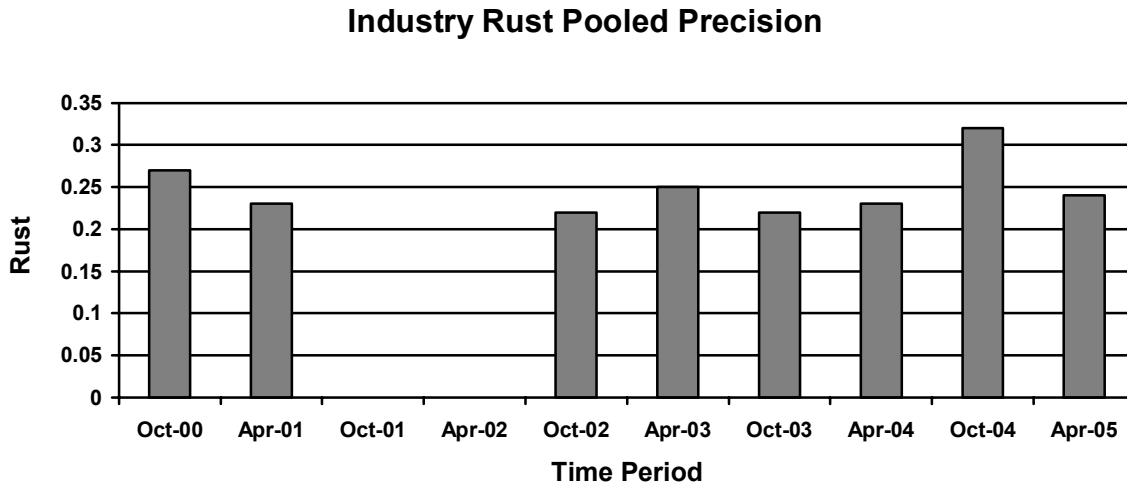
A total of 15 operationally valid test results were reported this period. The mean delta/s for this period is -0.63 severe, which equates to -0.15 merits. Of the 15 operationally valid tests reported this period, three were conducted on V99.1 hardware (-1.07 severe) and 12 on V01.1 (-0.52 severe). The three tests on V99.1 hardware were run at the same lab. Severity for the 15 operationally valid test results is severe of target as indicated in the chart below and Figure 1. Severity is being influenced by severe results from two labs (labs A and B). Figure 2 and Figure 3 are the Industry EWMA severity and cusum plots for reference oils 123 and 151-3. Reference oil 123 and reference 151-3 are both trending severe -0.75 and -0.45, respectively.



Shown below is a summary of the average rust  $\Delta/s$  for all laboratories reporting data this report period.



The industry precision estimate for this report period is 0.24 merits (pooled s). Precision this report period has improved slightly compared to previous period as shown below:



#### Industry Control Charts

Figure 1 is the Industry EWMA severity and precision chart of tests completed through March 31, 2005. There were two EWMA severity warning alarms and five EWMA severity action alarms triggered this report period. The alarms were related to severe results from two labs (labs A and B).

#### TMC Lab Visits

There was one lab visit conducted this report period. There were no discrepancies to report.

#### Information Letters

There was one information letter issued this report period. Information Letter 05-01, Sequence Number 4 was issued on February 21, 2005. Items changed with this information letter are documented in the L-33-1 timeline (Table 1).

Reference Oils

The following is a listing of reference oils with the expected number of tests remaining at the Test Monitoring Center and at the testing laboratories. L-33-1 reference oils are shipped in quantities of 1 gallon per test.

Reference Oil	Lab A	Lab B	Lab D	Lab E	TMC
123	1	2	4	2	0
123-2	9	9	4	5	241
151-3	11	6	5	7	*

\* 108 Gallons (Multiple test area usage)

## Attachments

c: L-33-1 Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/gear/l331/semiannualreports/l331-04-2005.pdf>

J. L. Zalar

F. M. Farber

Distribution: Email

### **Listing of Tables and Figures Included as Part of This Report to the L-33-1 Surveillance Panel**

Table 1 is the L-33-1 Industry Timeline.

Figure 1 is the Industry Control Chart for L-33-1 Rust, Reference Oils 123 and 151-3.

Figure 2 is the Industry Control Chart for L-33-1 Rust, Reference Oil 123 Only.

Figure 3 is the Industry Control Chart for L-33-1 Rust, Reference Oil 151-3 Only.

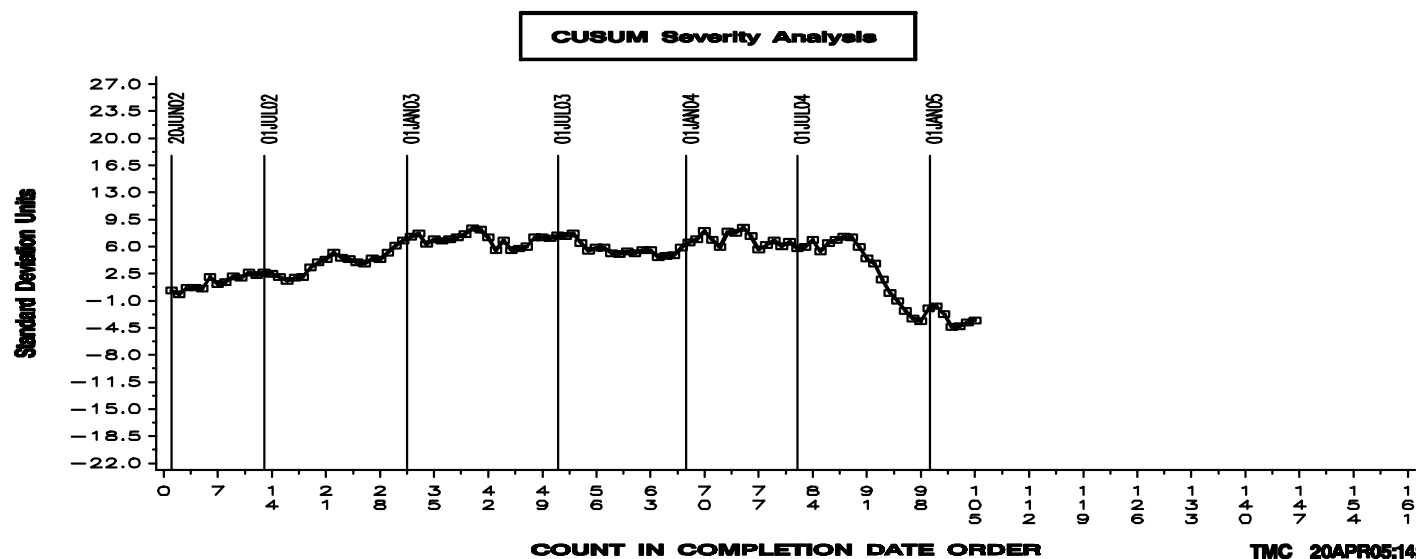
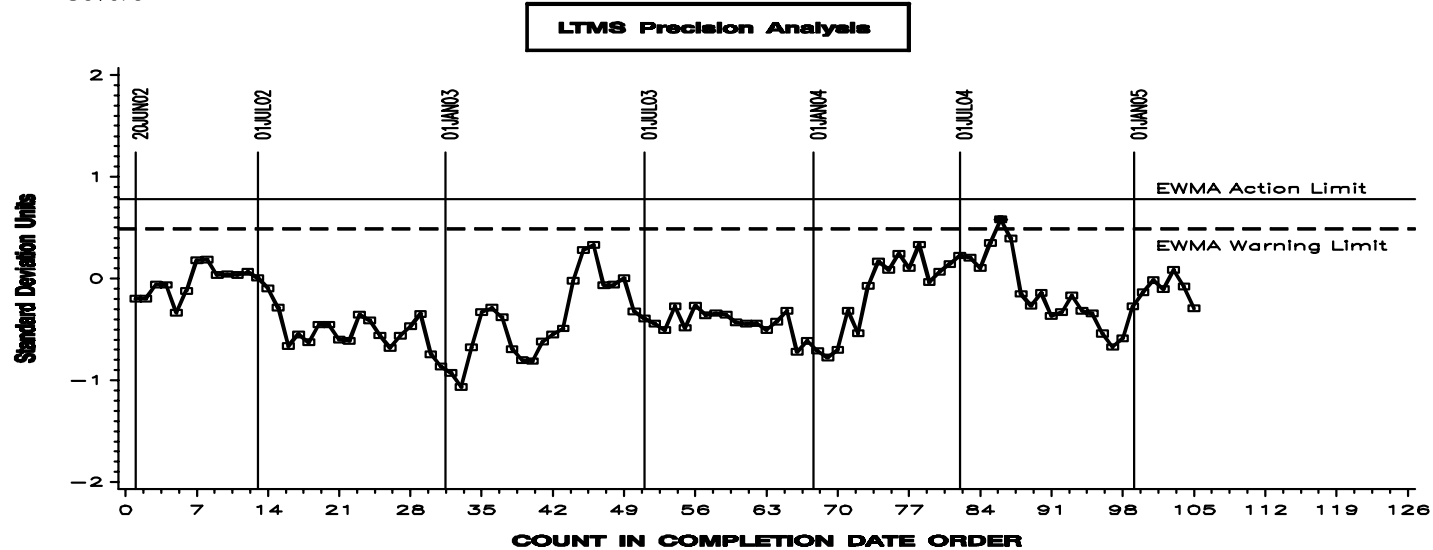
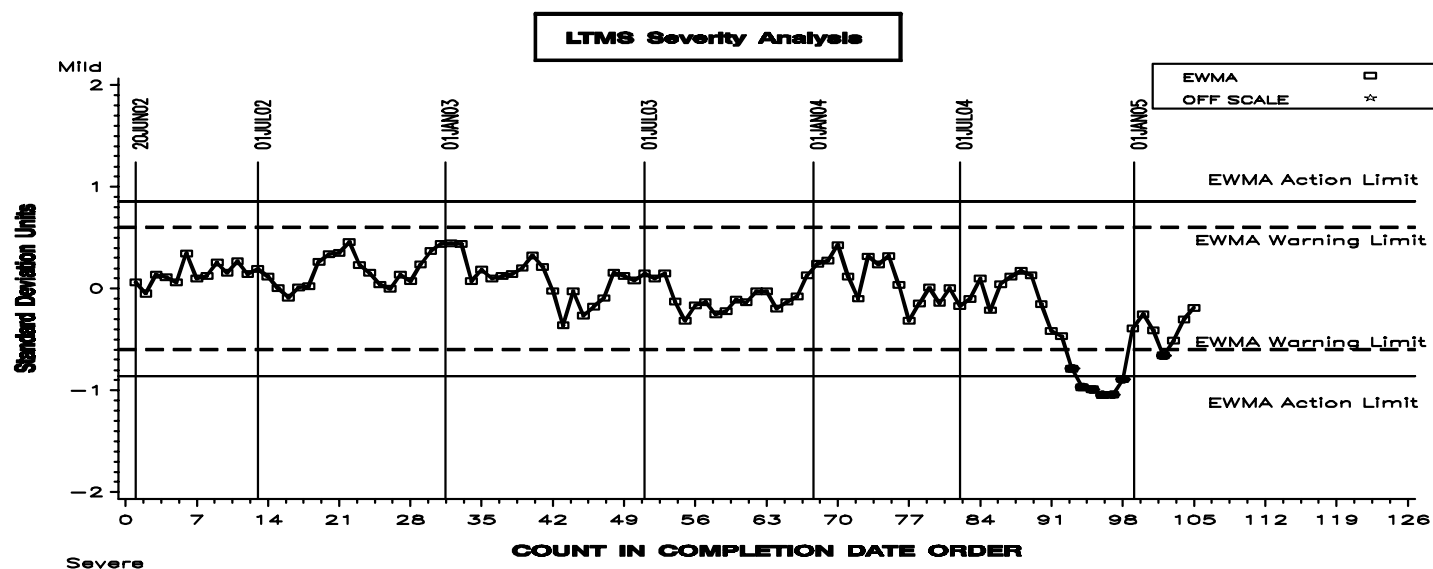
**Table 1**  
**L-33-1 Industry Timeline**

Effective Date	Topic	Information Letter Number
20030106	New L-33-1 test procedure	02-1
20030507	Revised test unit assembly procedure	03-1
20030507	Revised specification for the abrasive blasting cabinet regulator	03-1
20030507	Revised electric fan motor RPM specification	03-1
20030507	Tests run on non-calibrated stands are deemed non-interpretable tests	03-1
20030507	Revision to light rust definition	03-1
20030507	Editorial changes	03-1
20030916	Addition of bearing replacement guidelines	03-2
20030916	Addition of Dana Bulletin No. 5304-2 for Drive Pinion Shaft Installation	03-2
20040101	Change in cleaning solvent specification	03-2
20050221	Revised Solvent Specification	05-1
20050221	Revised Cover Plate Guide Pin Requirement	05-1
20050221	Updated Test Precision	05-1
20050221	Donated Reference Oil Test Programs/Calibration Period Length Adjustment	05-1
20050221	Revised Footnote 2	05-1



# L-33-1 INDUSTRY OPERATIONALLY VALID DATA

## ORIGINAL RUST CORROSION MERIT RATING

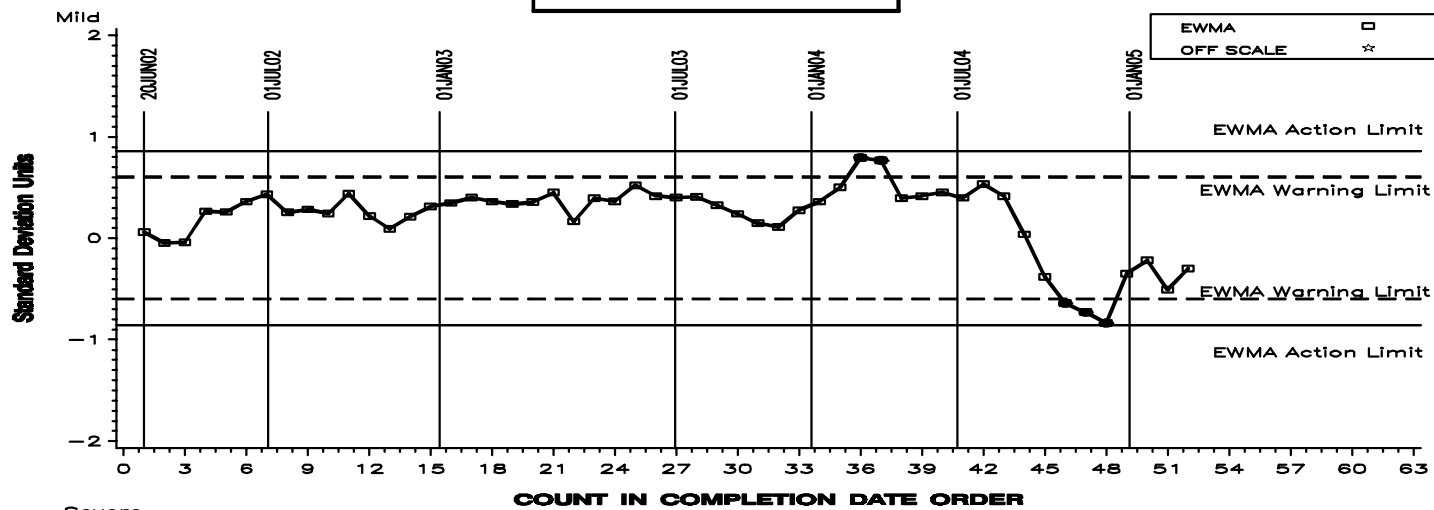


# L-33-1 INDUSTRY OPERATIONALLY VALID DATA

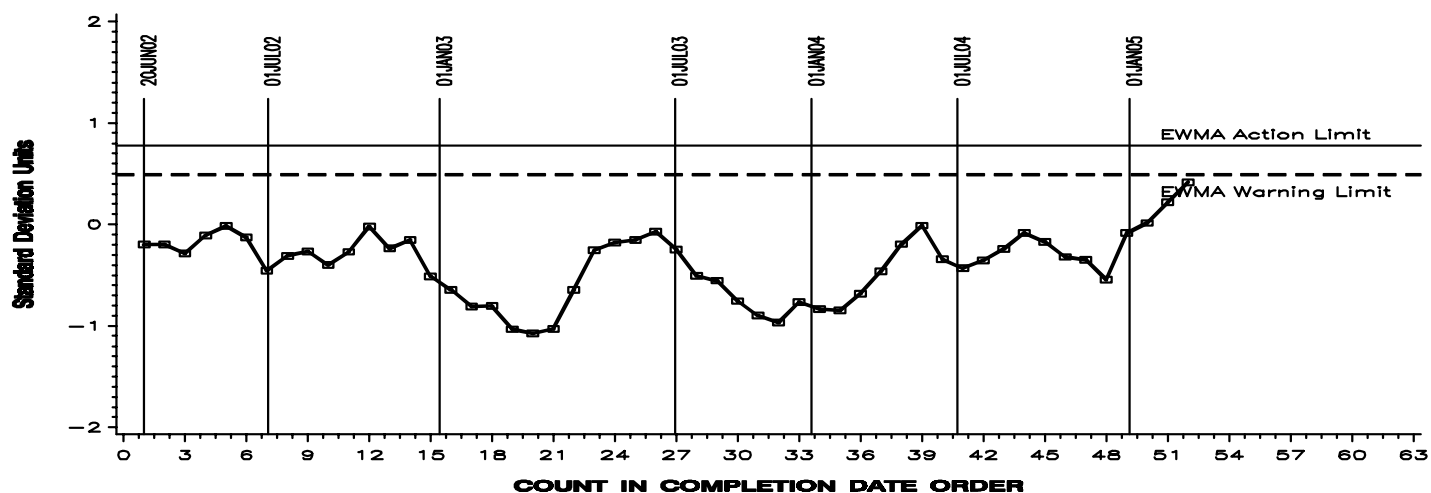
Reference Oil 123

## ORIGINAL RUST CORROSION MERIT RATING

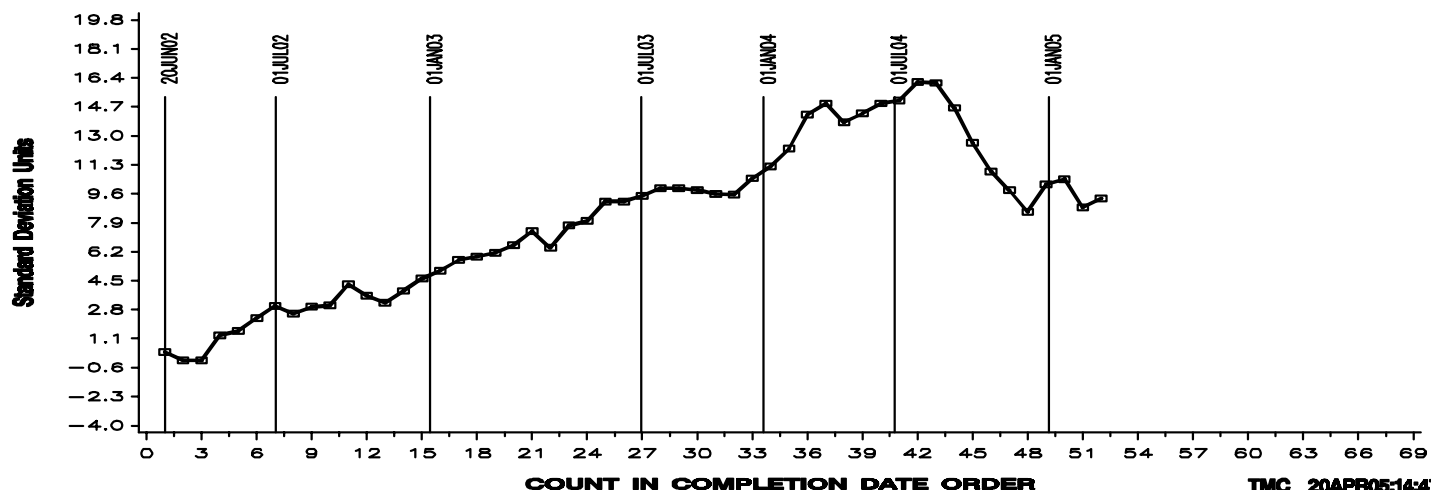
### LTMS Severity Analysis



### LTMS Precision Analysis



### CUSUM Severity Analysis

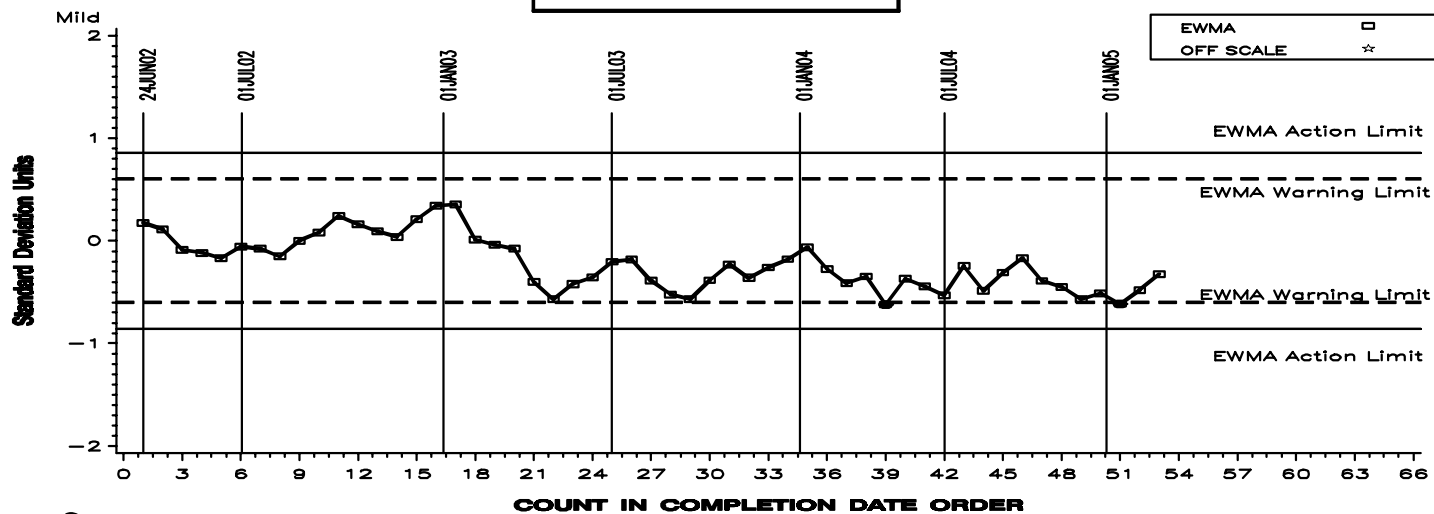


# L-33-1 INDUSTRY OPERATIONALLY VALID DATA

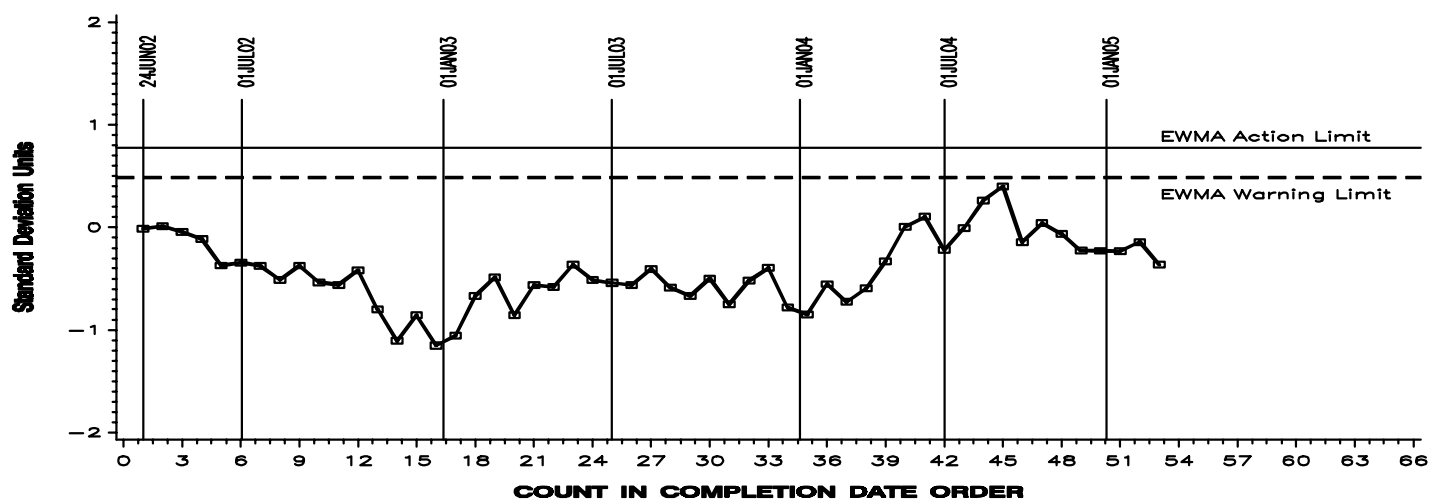
Reference Oil 151-3

## ORIGINAL RUST CORROSION MERIT RATING

### LTMS Severity Analysis



### LTMS Precision Analysis



### CUSUM Severity Analysis

