



# Test Monitoring Center

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Pittsburgh, PA 15206-4489  
(412) 365-1000

MEMORANDUM: 06-079

DATE: October 27, 2006

TO: Don Bell, Chairman, OSCT Surveillance Panel

FROM: Donald Lind

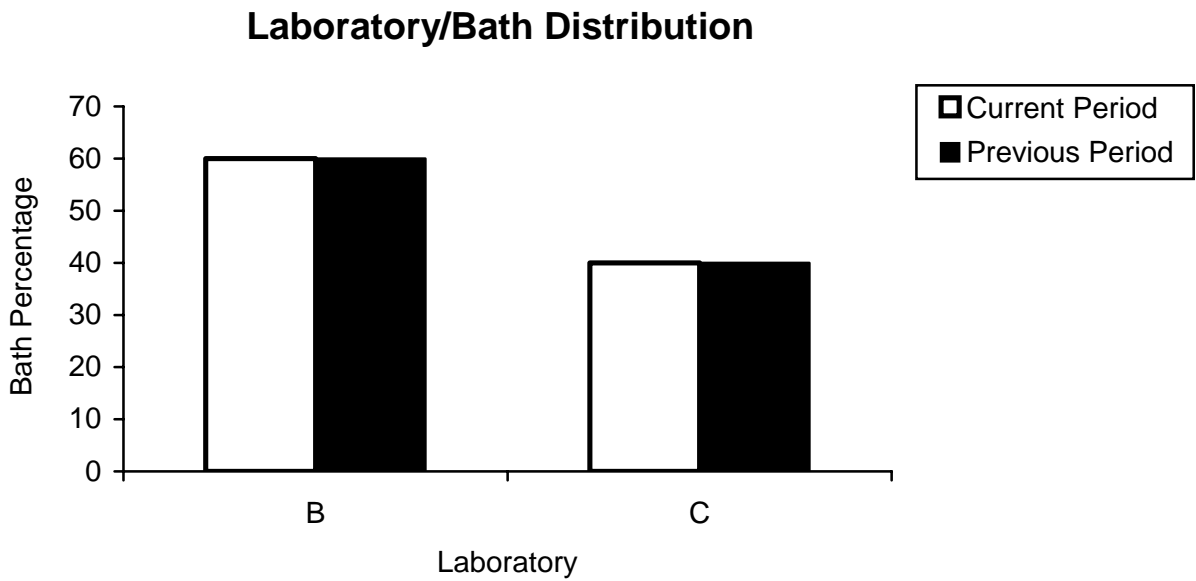
SUBJECT: OSCT Reference Test Status from April 1, 2006 through September 30, 2006

A total of 56 OSCT reference oil results from two laboratories were reported during the period April 1, 2006 through September 30, 2006.

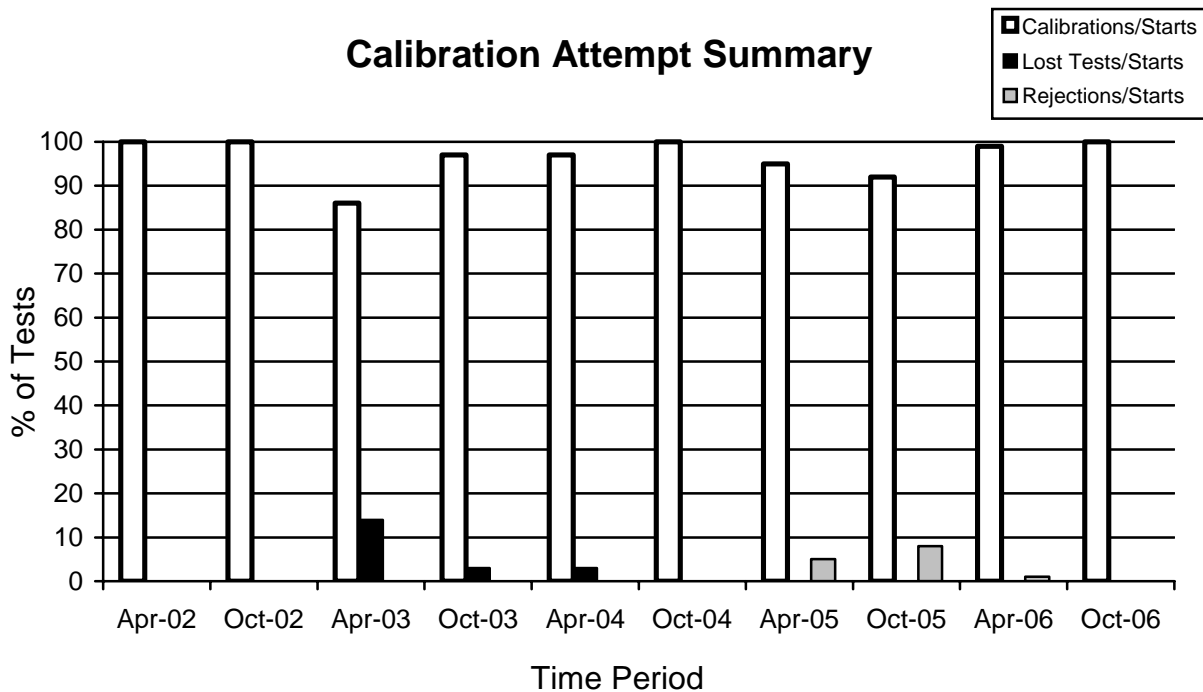
The following table summarizes the status of the reference oil test results reported to the TMC this report period:

Elastomer Type		TMC Validity	No. of Test Oil Results
Fluoroelastomer	Operationally and Statistically Acceptable	AC	23
	Statistically Unacceptable	OC	0
	Operationally Invalid	LC	0
	Aborted	XC	0
	Information Only	NN	0
	Elastomer Batch Approval	AG	2
Polyacrylate	Operationally and Statistically Acceptable	AC	19
	Statistically Unacceptable	OC	0
	Operationally Invalid	LC	0
	Aborted	XC	0
	Information Only	NN	0
Nitrile	Operationally and Statistically Acceptable	AC	12
	Statistically Unacceptable	OC	0
	Operationally Invalid	LC	0
	Aborted	XC	0
	Information Only	NN	0
TOTAL			56

The following chart shows the laboratory bath distribution for data reported during this report period:



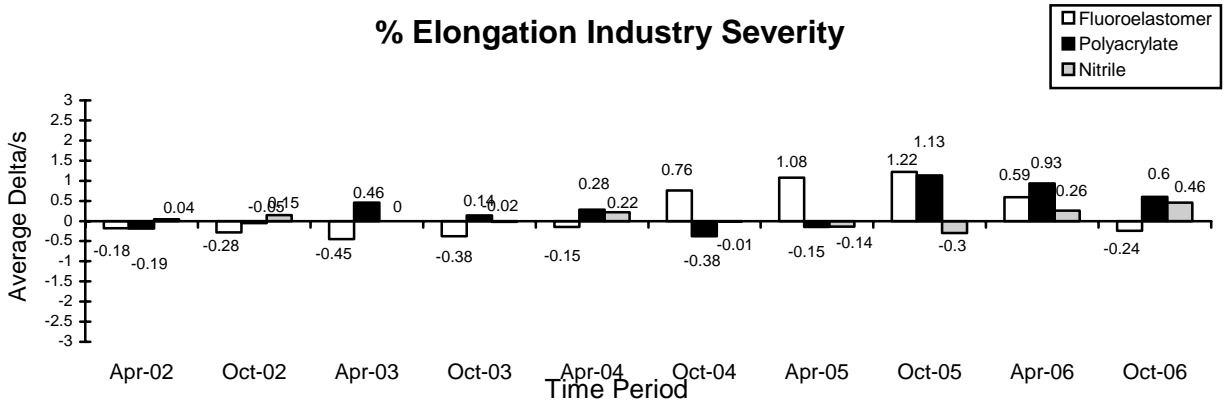
Attempted calibration tests are depicted graphically below by report period:



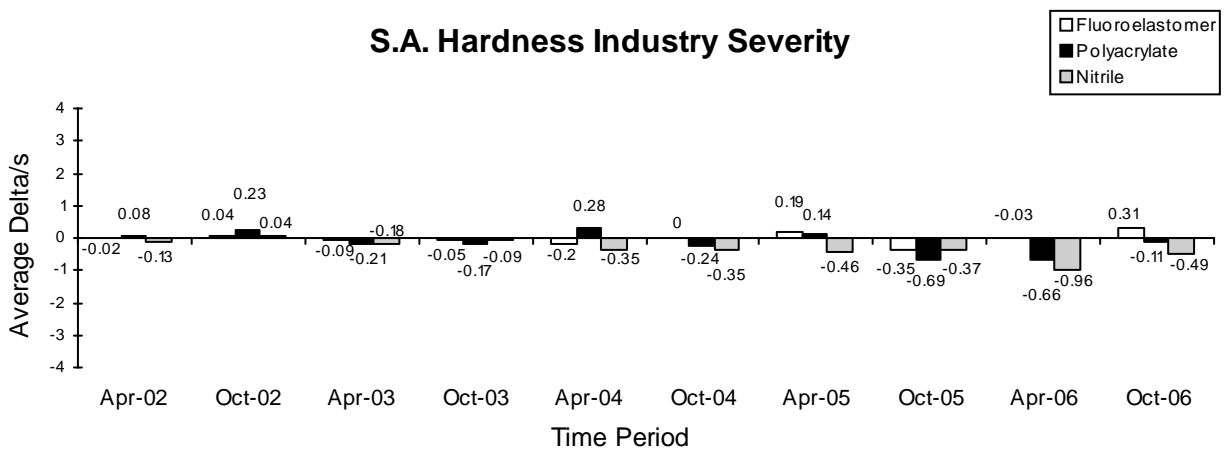
The calibration per start rate has increased slightly, the lost test per start rate remained the same, and the rejected per start rate has decreased slightly when compared to the last report period.

INDUSTRY TEST SEVERITY

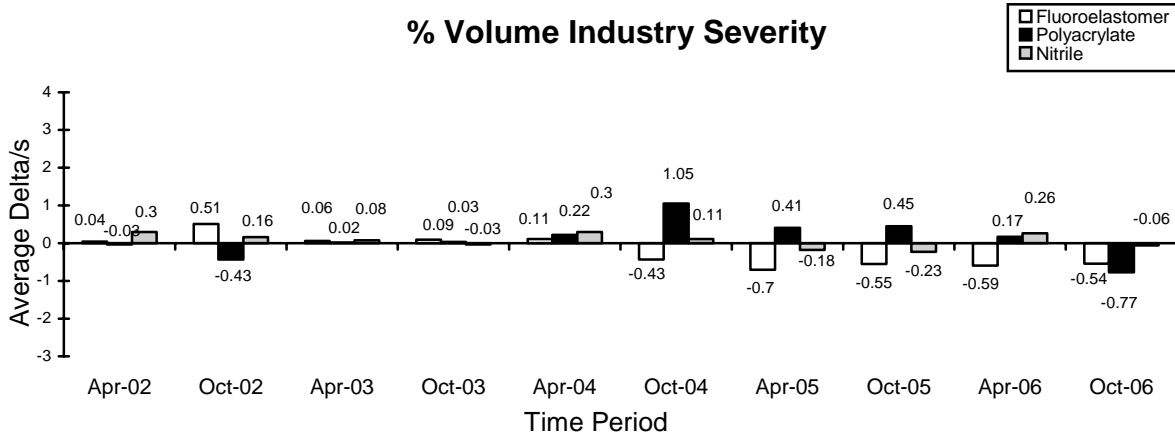
Percent elongation industry mean delta/s bar charts for the last ten report periods, for each elastomer material are shown below. Percent elongation for polyacrylate and nitrile materials trended mild for this report period. Percent elongation for fluoroelastomer trended severe this report period



S.A. hardness industry mean delta/s bar charts for the last ten report periods, for each elastomer material are shown below. S.A. hardness for polyacrylate and nitrile materials trended severe for this report period. S.A. hardness for fluoroelastomer trended mild this report period

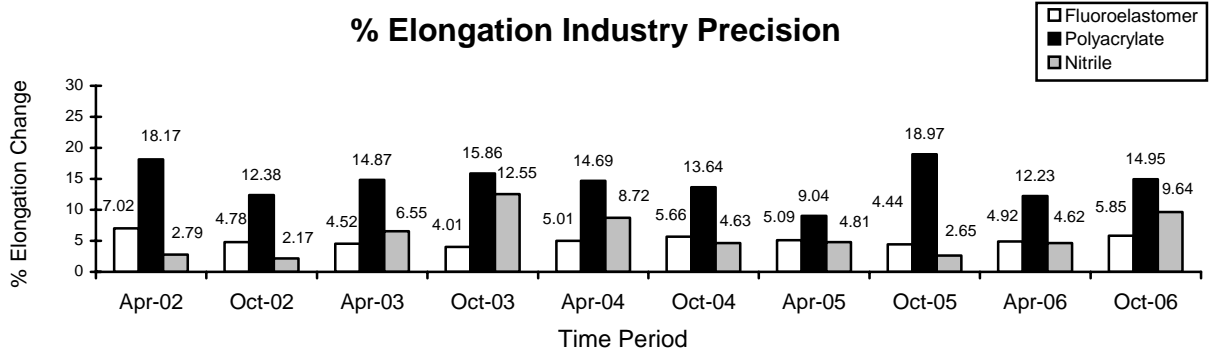


Percent volume industry mean delta/s bar charts for the last ten report periods, for each elastomer material are shown below. Percent volume for the polyacrylate, fluoroelastomer and nitrile materials trended severe of target for this report period.

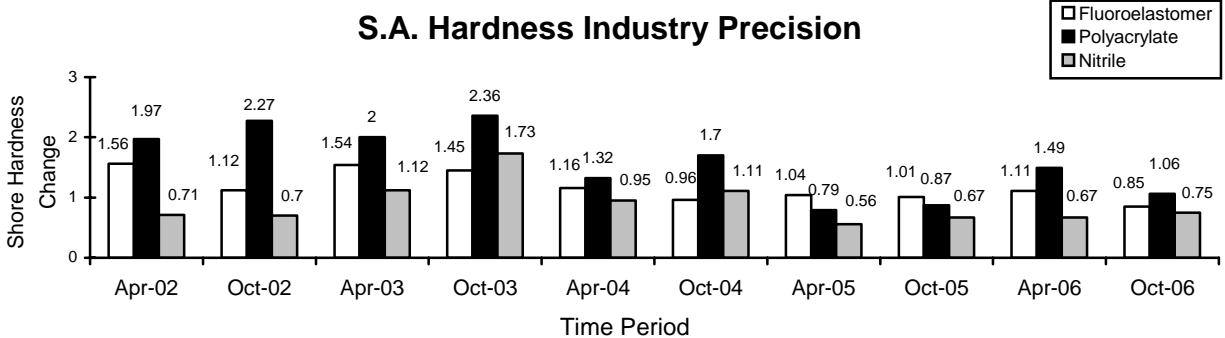


**INDUSTRY TEST PRECISION**

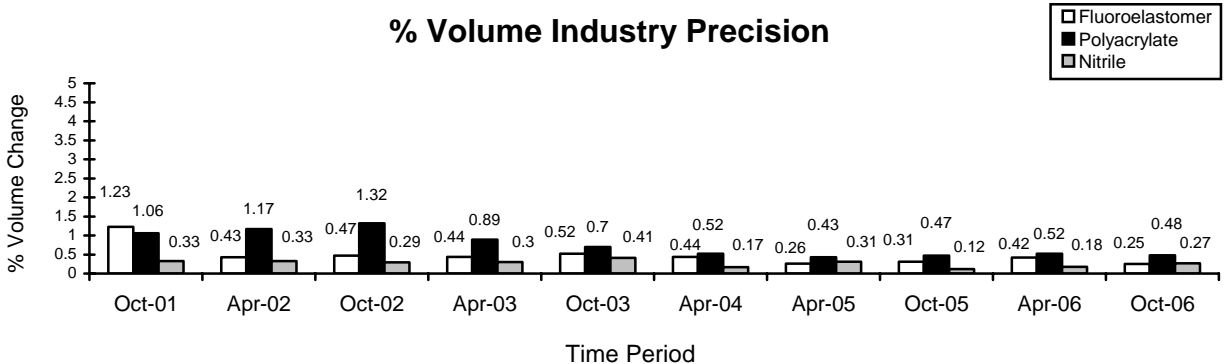
Percent elongation industry precision estimates for elastomer material, for the last ten report periods are shown below. Precision for nitrile, polyacrylate and fluoroelastomer has degraded with respect to the previous period. Precision for all three elastomers compares well with historical levels.



Shore hardness industry precision estimates for elastomer material, for the last ten report periods are shown below. Precision for the nitrile elastomer has degraded slightly with respect to the previous period. Precision for polyacrylate and fluoroelastomer elastomers has improved with respect to the previous period. Precision for all three elastomers compares well with respect to historical levels.



Percent volume industry precision estimates for elastomer materials, for the last ten report periods are shown below. Precision for polyacrylate and fluoroelastomer elastomers has improved with respect to the previous period. Precision for nitrile elastomers has degraded slightly with respect to the previous period. Precision for all three elastomers compares well with respect to historical levels.



INDUSTRY CONTROL CHARTS

Figures 1 through 3 are industry control charts for elongation change, shore hardness change, and percent volume change, respectively. Figures 4 through 6 are industry control charts of the last 120 test results for elongation change, shore hardness change, and percent volume change, respectively. Severity and precision EWMA charts for shore hardness change were in control this period. Percent volume change triggered eleven EWMA severity alarms (ten warning and one action) and no precision EWMA alarms. These alarms were due to five test results over -1.00 standard deviations severe. The severe alarms do not appear to be related to any one lab, bath, oil, or elastomer batch. Elongation change triggered one EWMA severity warning alarm and no precision EWMA alarms. The alarm was due to three consecutive test results over 1.00 standard deviations mild. The mild alarm does not appear to be related to any one lab, bath, oil, or elastomer batch.

REFERENCE OILS

The following table quantifies each reference oil by the number of reference oil containers remaining at the TMC and each laboratory. Each reference oil container has 750 ml (0.2 gallons) of oil.

LAB	160-1	161-1	162	168
B	7	12	0	7
C	7	5	1	5
TMC	649	218	0	239

INFORMATION LETTERS

There was one information letter issued during this report period Information Letter 06-02, Sequence Number 9 was issued on April 3, 2006. Items changed with this information letter are documented in the OSCT timeline (Table 1).

TMC LAB VISITS

There was one lab visit conducted this report period with no discrepancies noted.

DML/dml

Attachments

c: OSCT Surveillance Panel  
 J. L. Zalar, TMC  
 F. M. Farber, TMC  
<ftp://ftp.astmtmc.cmu.edu/docs/gear/osct/semiannualreports/osct-10-2006.pdf>

Distribution: Email

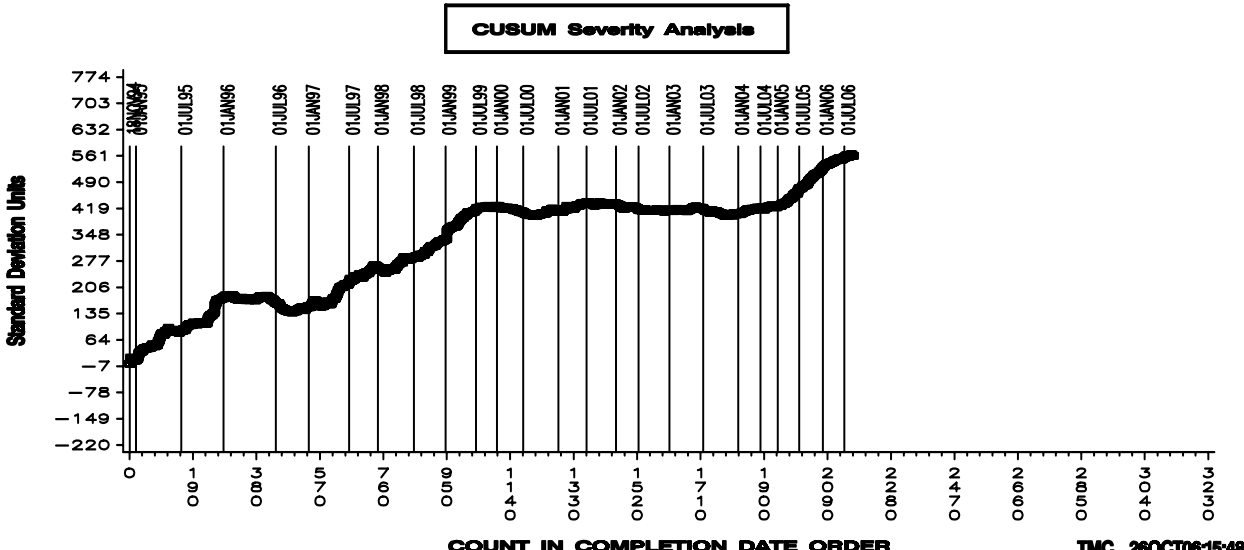
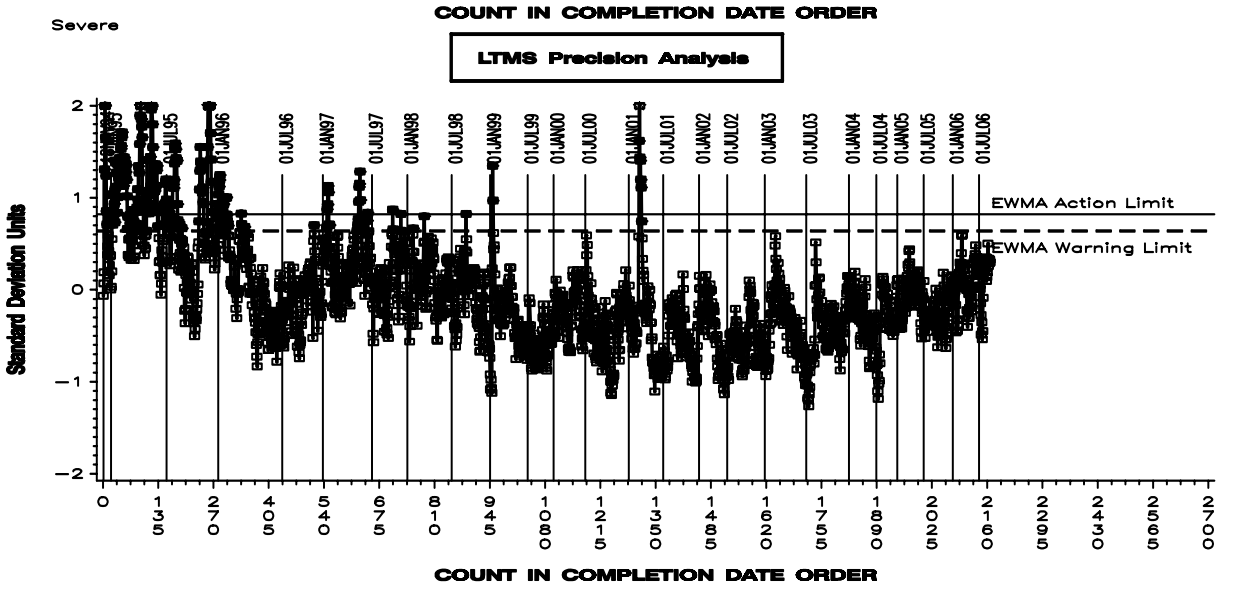
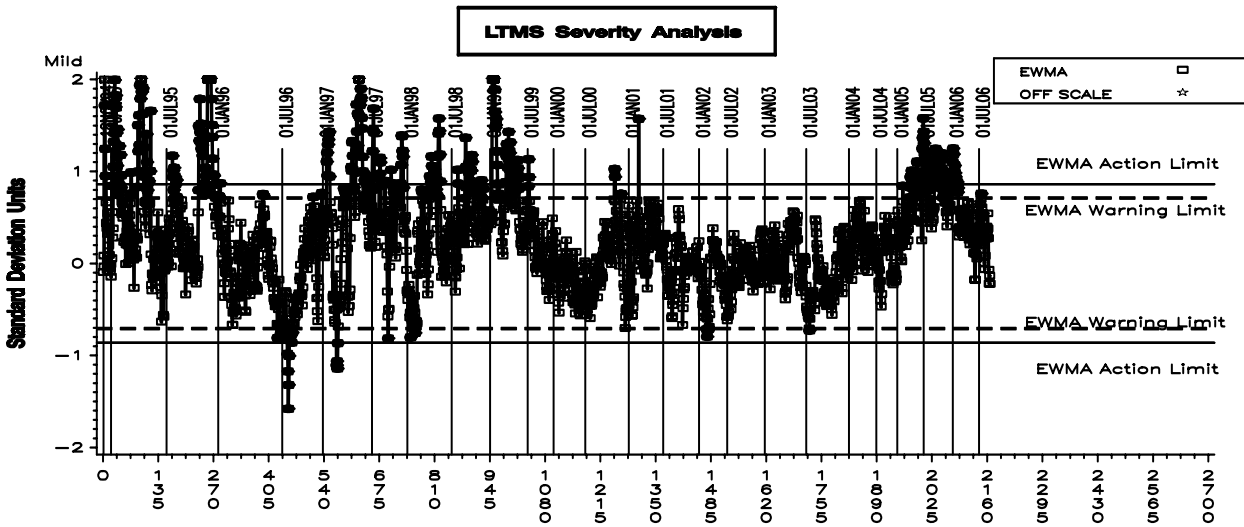
Table 1

Effective Date	OSCT Timeline	
	Topic	IL#
19961001	Test Report Forms and Data Dictionary	96-1
19970324	Elastomer Requirements For Testing a Non-reference Oil	97-1
19970701	Specimen Cleaning Procedure	97-2
19971201	Revised Test Report Forms and Data Dictionary	97-3
19980504	Seal Elastomer Shelf Life	98-1
19980504	Revised Reference Oil and Non-reference Oil Requirements	98-1
19980504	Addition of Calibration Requirements for Hardness Durometer, Balance, and Tension Testing Machine	98-1
19980817	Revised Test Report Forms and Data Dictionary	98-1
20050815	Updated Test Precision	05-1
20050815	Rounding Test Results Using ASTM E 29	05-1
20051102	Initial and Final Volume Measurements	05-2
20060327	Addition of a Calibration Procedure for the Tension Testing Machine	06-1
20060327	New Reference Oil Testing Section	06-1
20060327	Editorial Changes	06-1
20060331	Specimen Spacer Width Revision	06-2

Figure 1

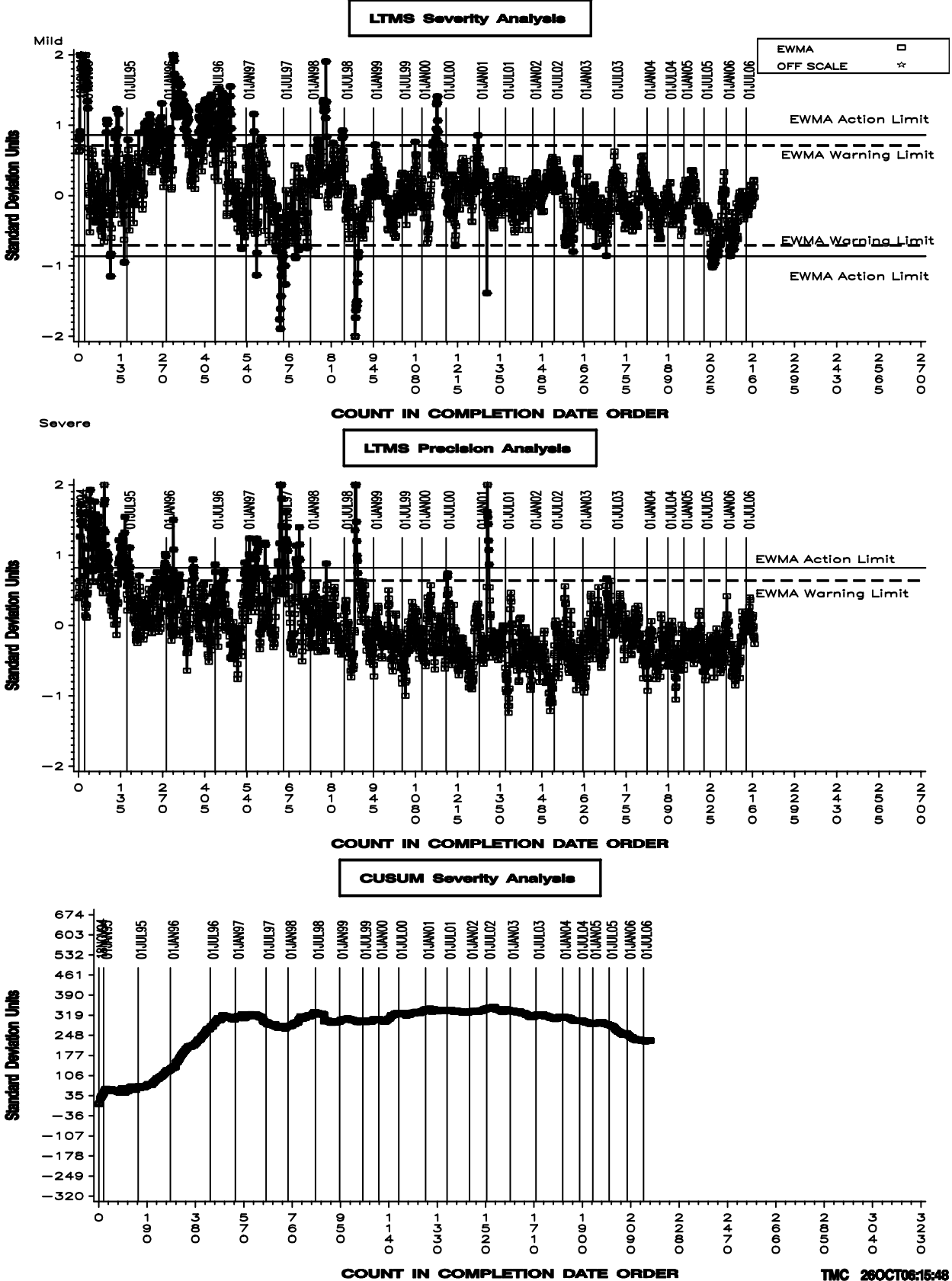
# OSCT INDUSTRY OPERATIONALLY VALID DATA

## REFERENCE ELONGATION CHANGE AVERAGE



# OSCT INDUSTRY OPERATIONALLY VALID DATA

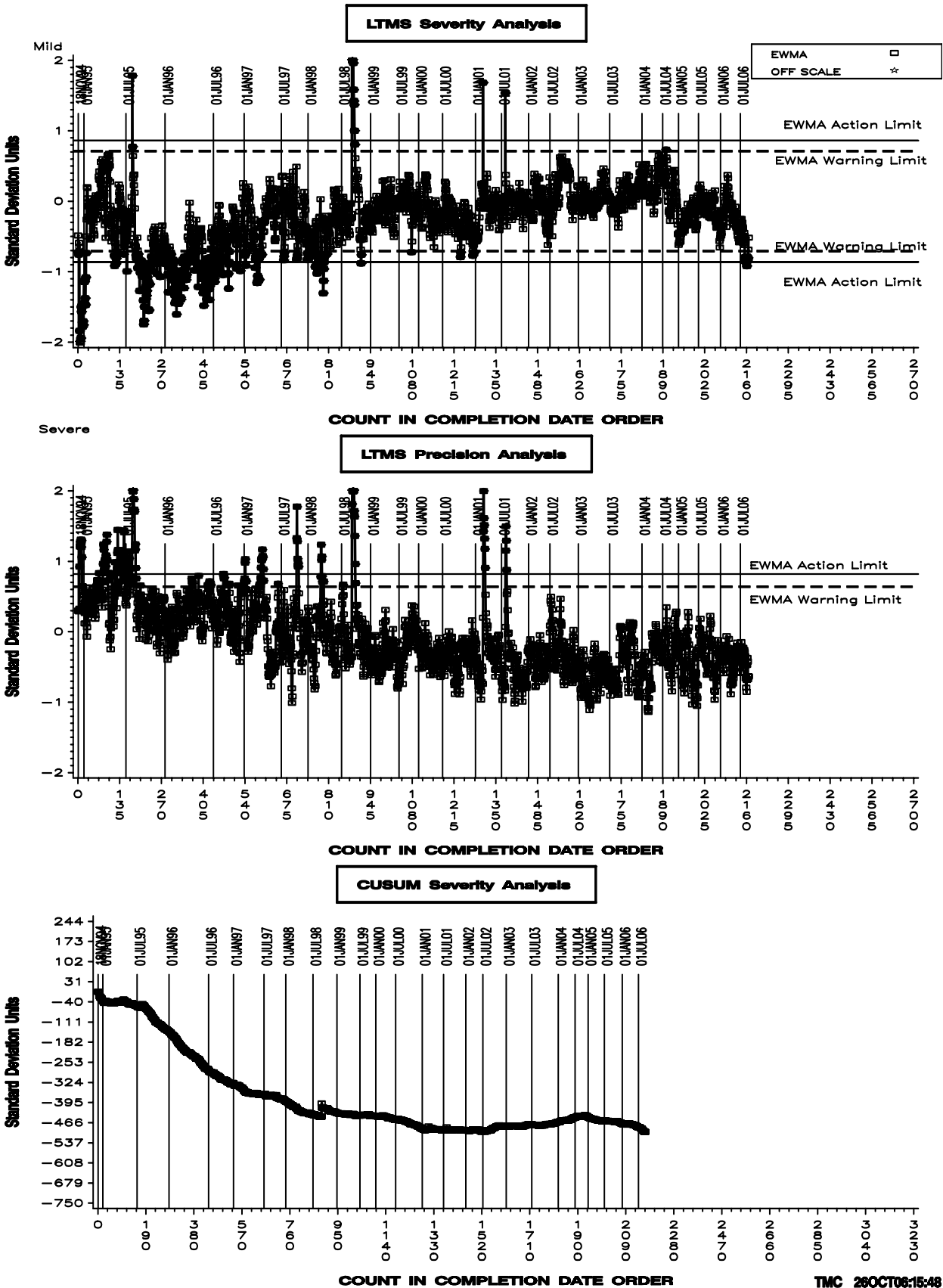
## REFERENCE SHORE A HARDNESS CHANGE AVERAGE





# OSCT INDUSTRY OPERATIONALLY VALID DATA

## REFERENCE PERCENT VOLUME CHANGE AVERAGE

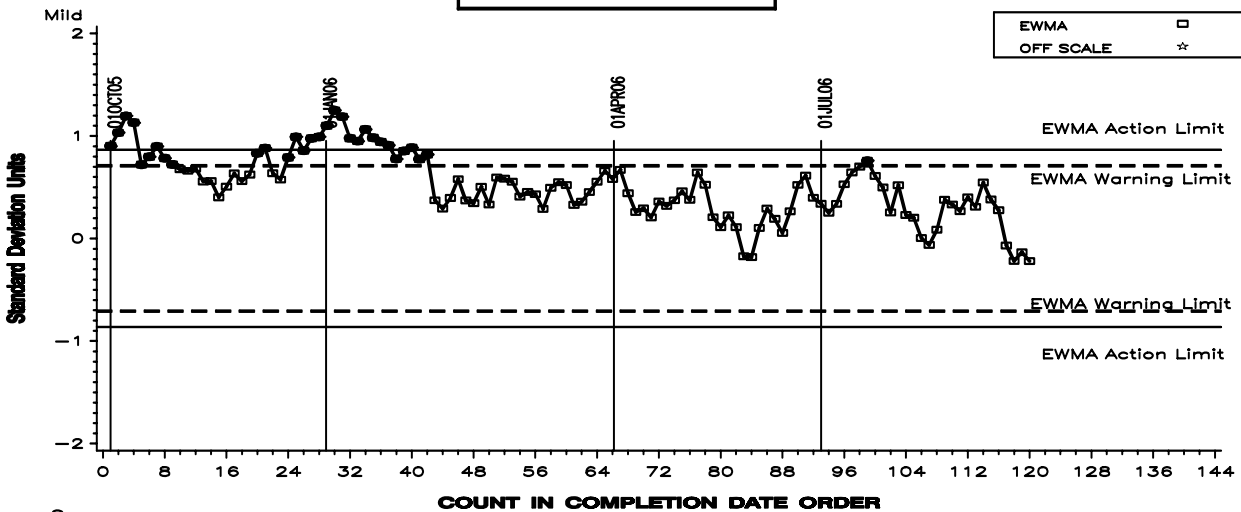


# OSCT INDUSTRY OPERATIONALLY VALID DATA

Last 120 Test Results

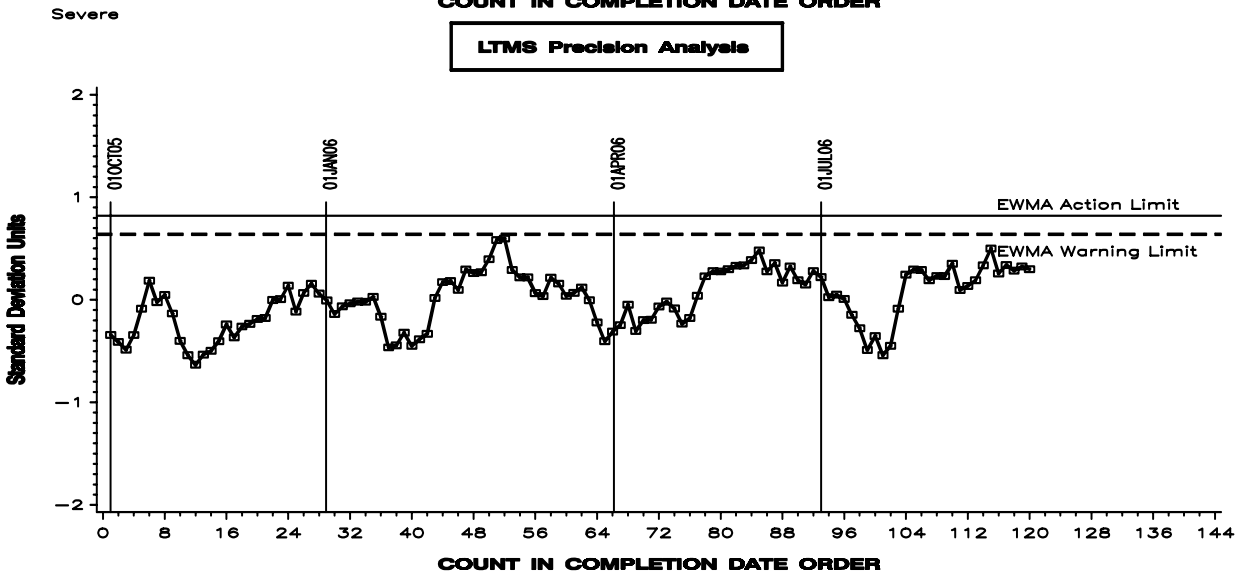
## REFERENCE ELONGATION CHANGE AVERAGE

LTMS Severity Analysis



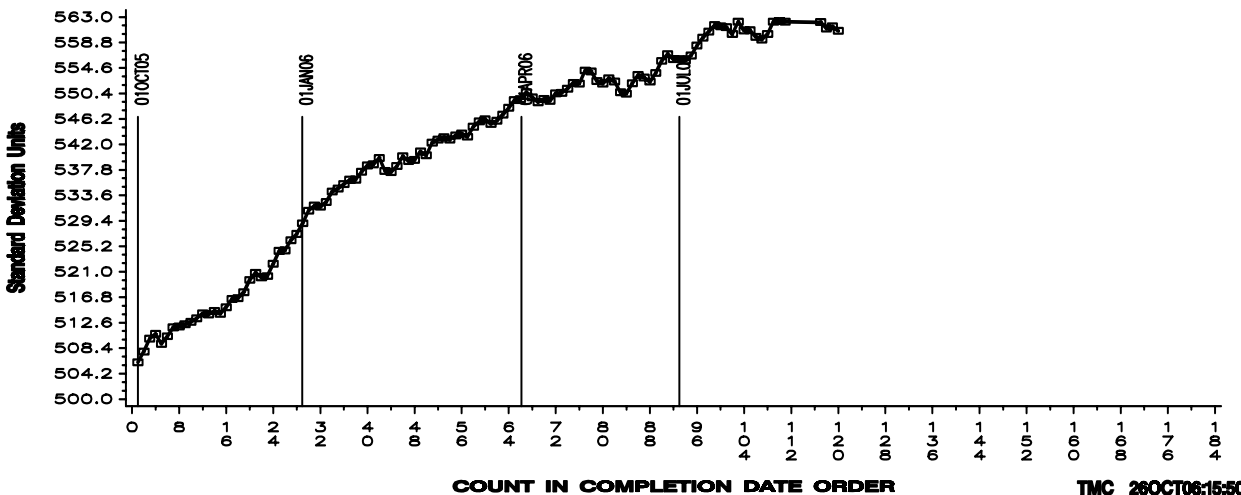
COUNT IN COMPLETION DATE ORDER

LTMS Precision Analysis



COUNT IN COMPLETION DATE ORDER

CUSUM Severity Analysis



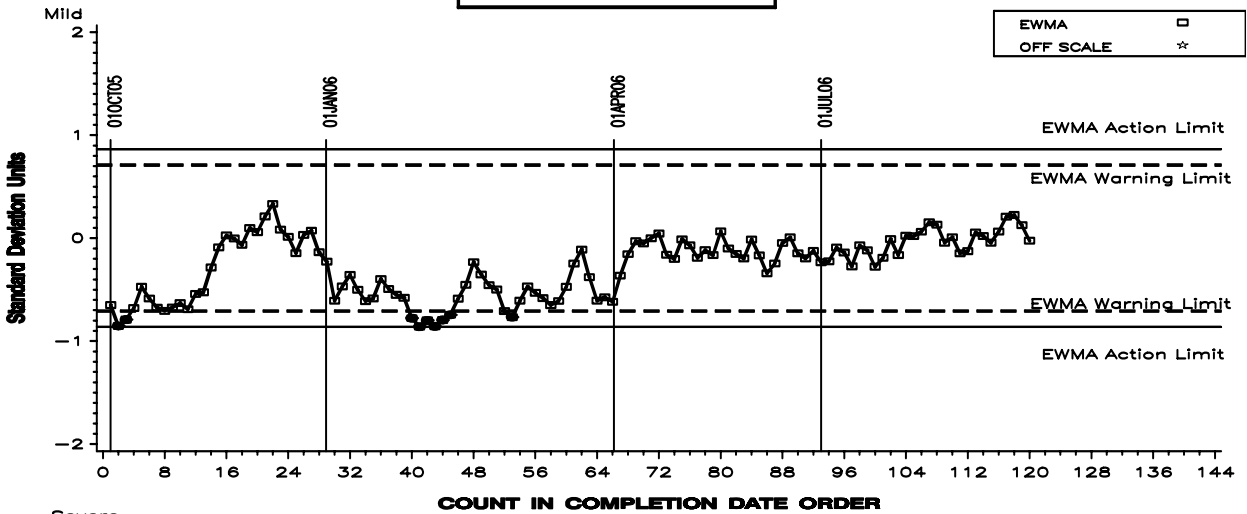
COUNT IN COMPLETION DATE ORDER

# OSCT INDUSTRY OPERATIONALLY VALID DATA

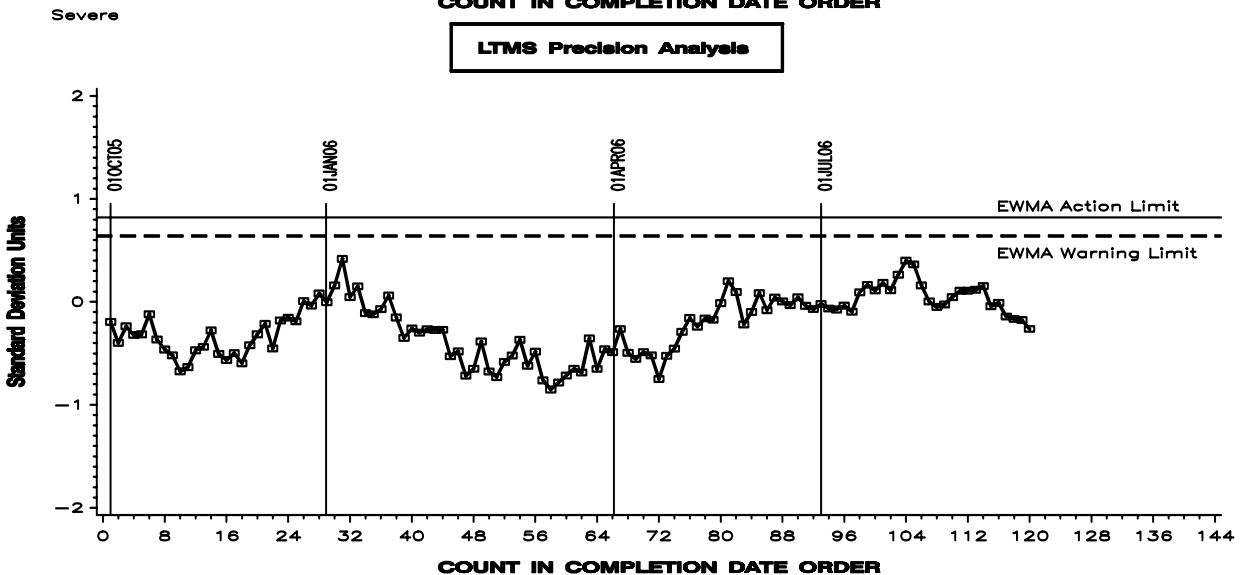
Last 120 Test Results

REFERENCE SHORE A HARDNESS CHANGE AVERAGE

LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

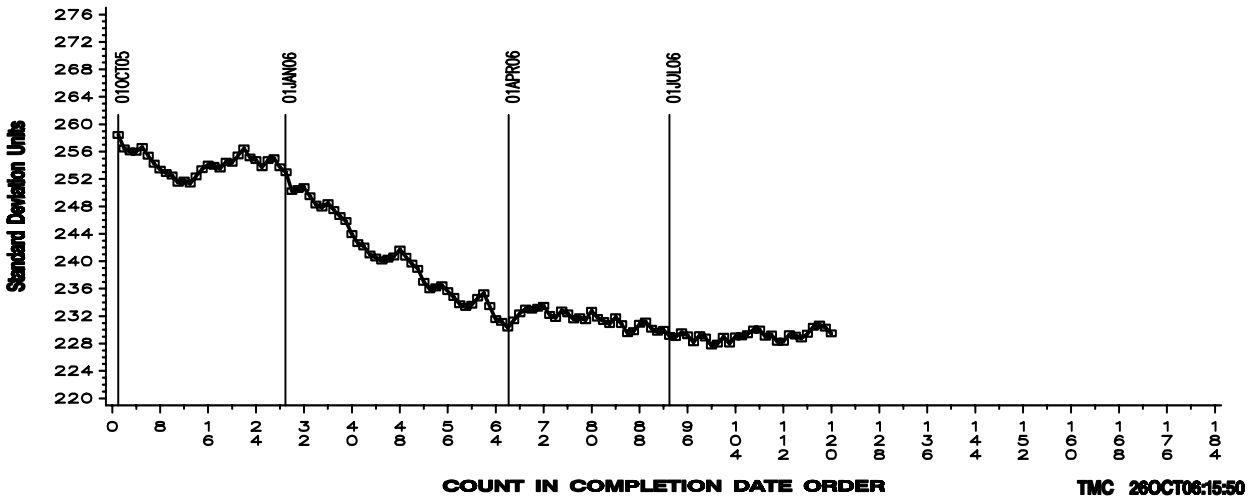


Figure 6

# OSCT INDUSTRY OPERATIONALLY VALID DATA

Last 120 Test Results

REFERENCE PERCENT VOLUME CHANGE AVERAGE

