Test Monitoring Center
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Pittsburgh, PA 15206-4489
(412) 365-1000

MEMORANDUM: 07-070

DATE: October 31, 2007

TO: Ed Callis, Chairman, ASTM Section D02.B0.06

FROM: Richard E. Grundza

SUBJECT: Two-Stroke Cycle Reference Test Status from April 1, 2007 through September 30, 2007

Status

RING STICKING (D 4857)

Three reference oil results and six tests run to evaluate non reference oil performance were reported from one laboratory during the period ending September 30, 2007. One of the reference oil attempts was aborted when scuffing was encountered at test hour 14. A second calibration test failed for Second Ring Sticking differing by more than one merit unit between cylinders. A third test resulted in stand calibration. Of the six results run to evaluate non-reference oil performance, four were found to be acceptable, while the remaining two tests were declared invalid. One test was invalid due to a plug wire failure. The second test was invalid due to a hot stuck ring. Figures 1 and 2 plot the summation delta/s for Second Ring Sticking and Piston Skirt Varnish of both the calibration attempts and the reference oil results obtained with reference oil 606, run to evaluate the performance of non-reference oils. Figure 1 shows severity trending severe for the period. The target values used for plotting purposes are the mean values used to generate the correction factor to be applied to reference oil 606, when run for non-reference oil evaluation. Figure 2 plots the summation delta/s for Piston Skirt Varnish for the period ending March 31, 2007. Figure 2 shows Piston Skirt Varnish to be mild.

LUBRICITY TEST (D 4863)

A total of two reference oil and one non-reference oil tests were reported to the Test Monitoring Center during the period ending September 30, 2007. Figure 3 plots the summation delta/s from target for the delta torque drops for the performance of reference oil 604-1 versus reference oil 600. Figure 4 plots the summation delta/s from target for the delta torque drops for the performance of reference oil 602 versus reference oil 600. Both Figures 3 and 4 shows mild results for the period

PREIGNITION TEST (D 4858)

Two reference tests from one lab were reported to the Test Monitoring Center during the period ending September 30, 2007. Figure 5 charts the performance of these results relative to the acceptance criteria and historical levels. Both results were within the acceptance criteria and well within the historic performance of the test.

Summary

Results with Test Method D 4857 showed Second Ring Sticking trending severe and Piston Skirt Varnish trending mild. Tightening test (D4863) was mild for the period and the preignition test (D4858) is performing well within historical levels.

REG/reg

Attachments

c: F. M. Farber, TMC
J. L. Zalar, TMC
Two-Stroke Cycle Mailing List
ftp://ftp.astmtmc.cmu.edu/docs/gas/tc/semiannualreports/tc-10-2007.pdf

Distribution: Email

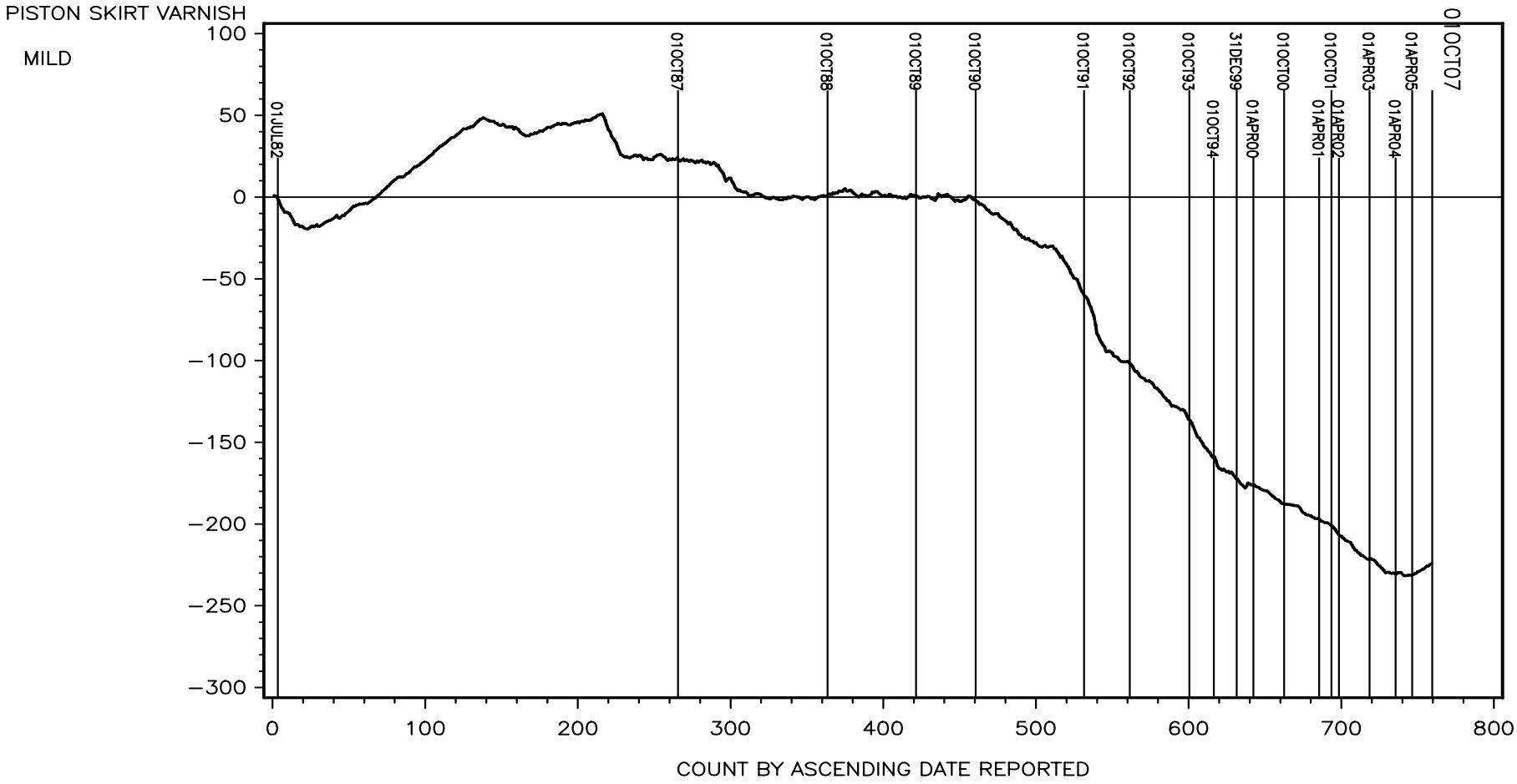
FIGURE 1

TWO—STROKE—CYCLE
RING STICKING TEST (D 4857)
CUSUM PLOT OF SECOND RING STICKING
Using Updated Targets after 4/1/00

Test Targets Based on Data Reported Prior to 10/16/90 for Refence Oil 600
Tests Targets for Reference Oil 606 is the Mean of the Data Used to Develop the Correction Factor

FIGURE 2

TWO—STROKE—CYCLE
RING STICKING TEST (D 4857)
CUSUM PLOT OF PISTON SKIRT VARNISH
Using Updated Targets After 4/1/00



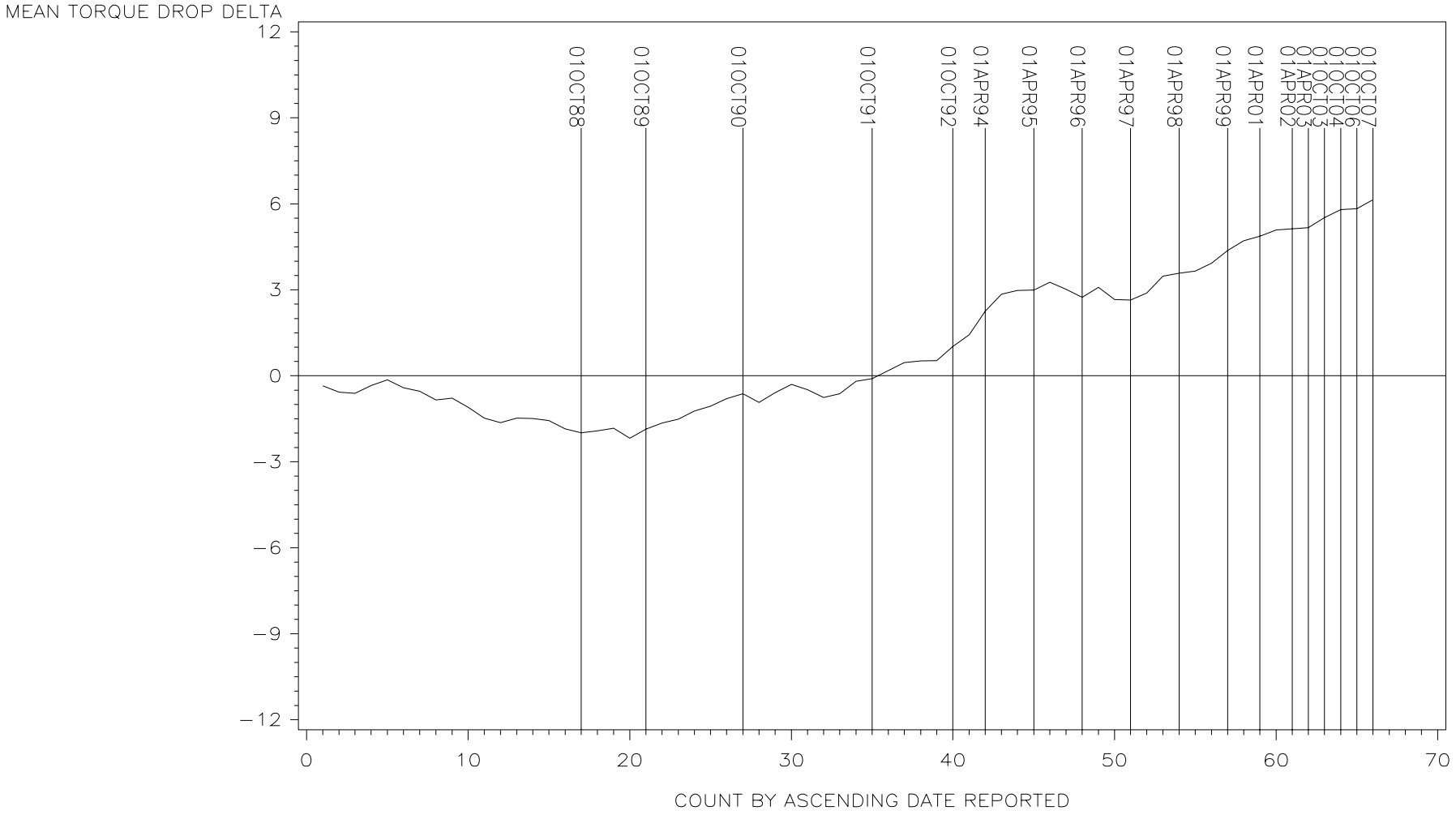
TEST TARGETS BASED ON DATA REPORTED PRIOR TO 10/16/90 for Reference Oil 600
Tests Targets for Reference Oil 606 is the Mean of the Data Used to Develop the Correction Factor

FIGURE 3

TWO–STROKE–CYCLE

STANDARD TEST METHOD FOR DETERMINATION OF LUBRICITY OF TWO STROKE CYCLE GASOLINE ENGINE LUBRICANTS (D 4863)

MEAN TORQUE DROP OF OIL VI–EE, (TMC 604) RELATIVE TO VID (TMC 600)



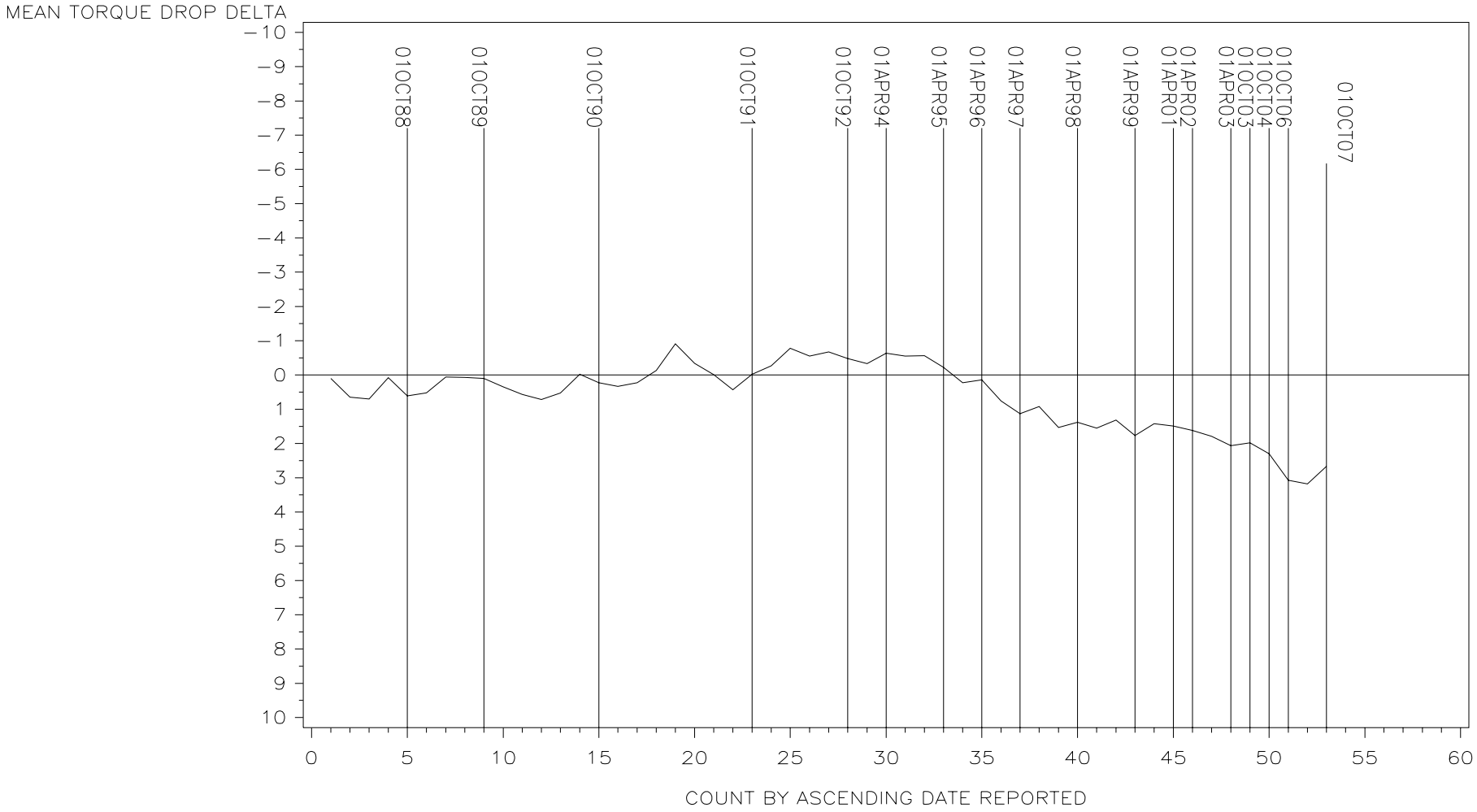
TEST TARGETS BASED ON ALL TESTS REPORTED PRIOR TO 10/31/91

FIGURE 4

TWO–STROKE–CYCLE

STANDARD TEST METHOD FOR DETERMINATION OF LUBRICITY OF TWO STROKE CYCLE GASOLINE ENGINE LUBRICANTS (D 4863)

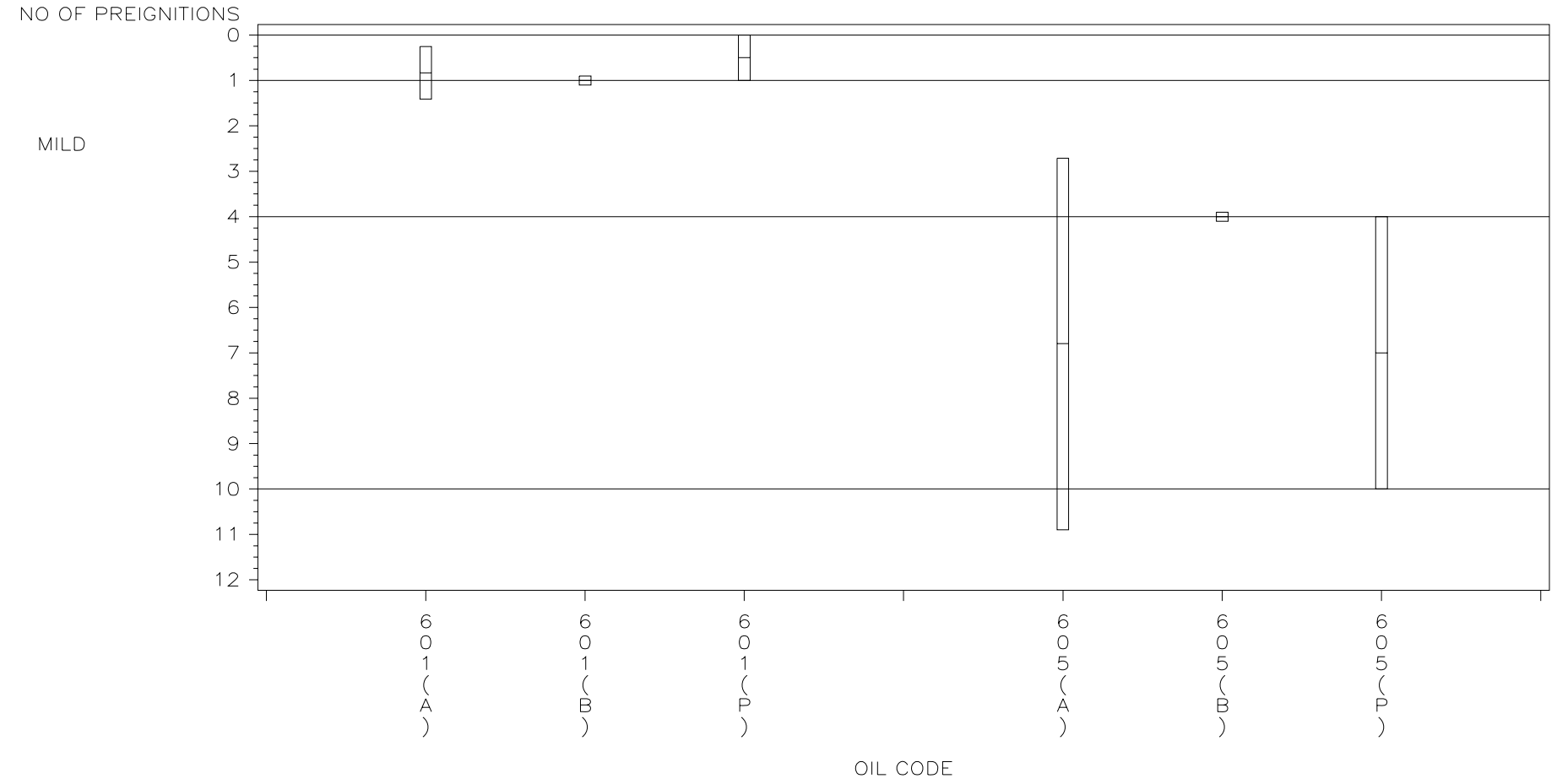
MEAN TORQUE DROP OF OIL VI–G, (TMC 602) RELATIVE TO VI–D (TMC 600)



TEST TARGETS CALCULATED USING ALL DATA PRIOR TO 10/31/91

FIGURE 5

TWO STROKE CYCLE PREIGNITION TEST
MEAN AND +/− 1 STANDARD DEVIATION BAND PLOT OF ACTUAL PREIGNITIONS
FOR ALL HISTORICAL DATA AND ASTM PERIOD ENDING 9/30/07



(A) AFTER OIL CODE REPRESENTS ALL HISTORICAL DATA
(B) AFTER OIL CODE REPRESENTS CURRENT ASTM REFERENCE PERIOD
(P) AFTER OIL CODE REPRESENTS LIMITS FOR STAND CALIBRATION GIVEN
IN STANDARD TEST PROCEDURE D−4858
TMC OIL CODE 605 = VI−NA, TMC OIL CODE 601 = VI−E