



# Test Monitoring Center

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MEMORANDUM: 06-018  
DATE: April 10, 2006  
TO: Warren Totten, Chairman, Cummins Surveillance Panel  
FROM: Jeff Clark  
SUBJECT: ISB Calibration Testing for the April 2006 ASTM Report Period

The following is a summary of ISB reference oil tests completed during the April 2006 ASTM report period, which began on October 1, 2005 and ended on March 31, 2006.

Test Status	TMC Validity Code	Number of Tests
Acceptable Calibration Test	AC	1
Failed Calibration Test (LTMS Criteria)	OC	1
Operationally Invalid Test	RN	2
Aborted Test	XC	0
Total		4

The test that failed the LTMS criteria (OC) was due to severe tappet weight loss. The operationally invalid tests (RN) were both part of a non-blind base oil interchange program. The lab submitted both tests as valid, however, Stage A oil sump temperature was out of spec for both tests.

### Severity and Precision:

Figures 1 and 2 (attached) show the current industry EWMA severity, EWMA precision, and cusum charts for Average Camshaft Wear (ACSW) and Average Tappet Weight Loss (ATWL). ACSW is currently within control chart limits. ATWL is in an industry severity warning action alarm in the severe direction, however, low-test activity makes it difficult to offer any meaningful commentary regarding this trend.

Precision estimates will be presented on an annual basis, in the table below. The precision estimate for 2005 was primarily generated from the PC-10 matrix program. No estimate is yet available for 2006.

**ISM Precision Estimates**

<b>Parameter</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
df	15				
ACSW	6.69				
ATWL	14.13				

Reference Oils:

The current reference oil test targets are shown below:

<b>Oils</b>	<b>N</b>	<b>Parameter</b>	<b>Mean</b>	<b>S</b>
831 (PC10B)	6	ACSW ( $\mu\text{m}$ )	41.9	5.6
		ATWL (mg)	88.7	15.9

To date, seven tests have been completed on oil 831. The TMC will notify the surveillance panel when ten tests have been completed.

Information Letters:

No ISB Information Letters were issued this ASTM period.

TMC Laboratory Visits:

No TMC laboratory visits were conducted this ASTM period.

Additional Information:

The ISB database, timeline, and alarm logs can be accessed on the TMC's homepage. If you have any questions on how to access this information, contact the TMC.

JAC/jac/mem06-018.jac.doc

Attachments

c: J.L. Zalar, TMC

F.M. Farber, TMC

Cummins Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/diesel/cummins/semiannualreports/ISB-04-2006.pdf>

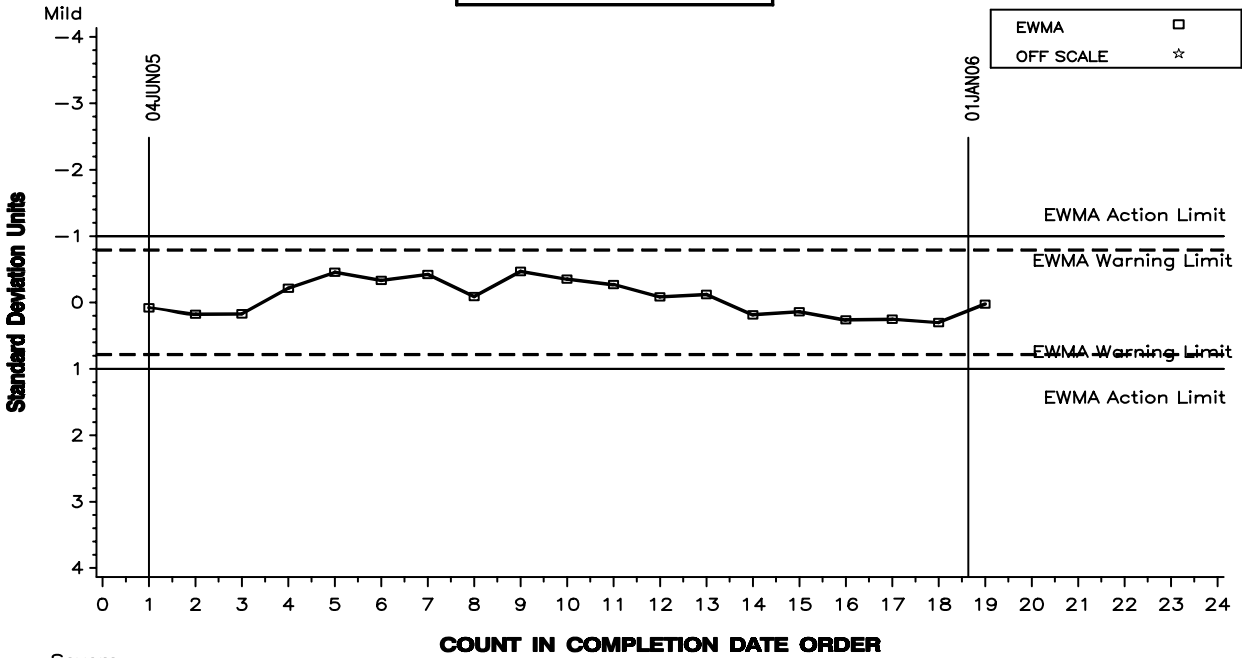
Distribution: Email

FIGURE 1

CUMMINS ISB INDUSTRY OPERATIONALLY VALID DATA

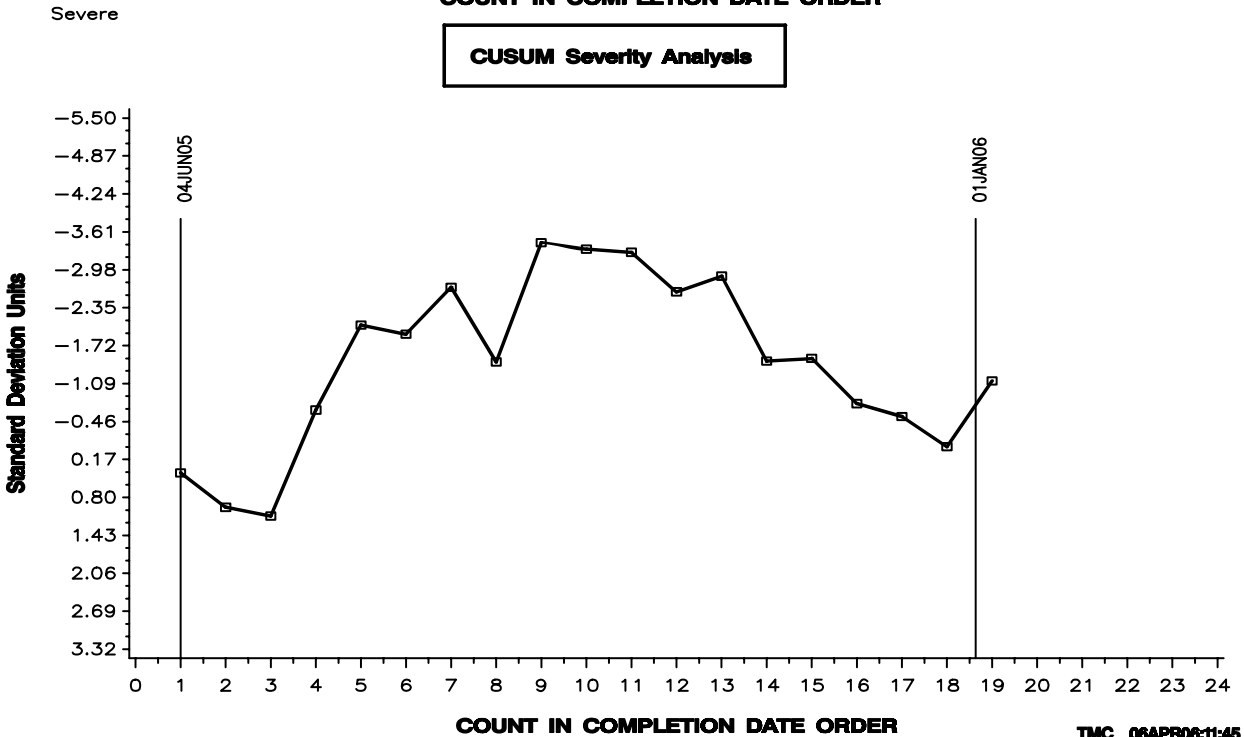
AVERAGE CAMSHAFT WEAR

LTMS Severity Analysis



COUNT IN COMPLETION DATE ORDER

CUSUM Severity Analysis



COUNT IN COMPLETION DATE ORDER

FIGURE 2

CUMMINS ISB INDUSTRY OPERATIONALLY VALID DATA

AVERAGE TAPPET WEIGHT LOSS

