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

MEMORANDUM: 06-062

DATE: October 2, 2006

TO: Jim Moritz, Chairman, Cummins Surveillance Panel

FROM: Jeff Clark

SUBJECT: ISM Calibration Testing for the October 2006 ASTM Report Period

The following is a summary of ISM reference oil tests completed during the October 2006 ASTM report period, which began on April 1, 2006 and ended on September 30, 2006.

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

Severity and Precision:

In general, the ISM is experiencing some large severity trends as explained in the paragraphs below. However, because reference testing volume remains extremely low, the impact, meaning, and cause of any of these trends cannot truly be discerned.

Figure 1 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Crosshead Weight Loss (CWL). CWL is currently within control chart limits. For this period, CWL is trending an average of 1.20 Δ/s mild, which is approximately 1.7 mg. This trend is potentially having a large impact on candidate testing as it represents 30% of the ISM Merit Anchor value of 5.7 mg. It should also be noted that this trend appears to have begun prior to this ASTM period.

Figure 2 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Filter Plugging Delta P (FPD). FPD is currently within control chart limits. For this period, FPD is trending an average of 0.29 Δ/s severe, which is approximately 2 kPa at the ISM Merit Anchor value of 13 kPa.

Figure 3 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Average Sludge Rating (ASR). ASR is currently within control chart limits. For this period, ASR is trending an average of 0.60 Δ/s severe, which is approximately 0.09 merits.

Figure 4 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Injector Adjusting Screw Weight Loss (IAS). IAS is in an industry severity action alarm in the mild direction. For this period, IAS is trending an average of 0.88 Δ/s mild, which is approximately 9.4 mg. This trend is potentially having a large impact on candidate testing as it represents 35% of the ISM Merit Anchor value of 27 mg. It should also be noted that this trend appears to have begun prior to this ASTM period.

Precision estimates will be presented on an annual basis, in the table below. The precision estimate for 2005 has only two degrees of freedom which makes it difficult to compare to the 2004 precision estimates. The precision estimate for 2006 is a preliminary estimate based on testing to date.

ISM Precision Estimates

Parameter	2004	2005	2006	2007	2008
df	6	2	3		
CWL	1.4	0.5	0.8		
FPD (ln units)	0.4227	0.2561	0.1429		
ASR	0.13	0.15	0.14		
IAS	7.0	5.0	4.7		

Reference Oils:

The current reference oil test targets are shown below:

Oils	N	Parameter	Mean (cSt)	S
830-2	10	CWL	5.3	1.4
		FPD	2.3363	0.4130
		ASR	8.99	0.15
		IAS	24.5	10.7

To date, 15 tests have been run on oil 830-2.

Information Letters:

No ISM Information Letters were issued this ASTM period.

TMC Laboratory Visits:

No TMC laboratory visits were conducted this ASTM period.

Additional Information:

The ISM 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/mem06-062.jac.doc
Attachments
c: J.L. Zalar, TMC
F.M. Farber, TMC
Cummins Surveillance Panel
ftp://ftp.astmtmc.cmu.edu/docs/diesel/cummins/semiannualreports/ISM-10-2006.pdf

Distribution: Email

FIGURE 1

ISM INDUSTRY OPERATIONALLY VALID DATA

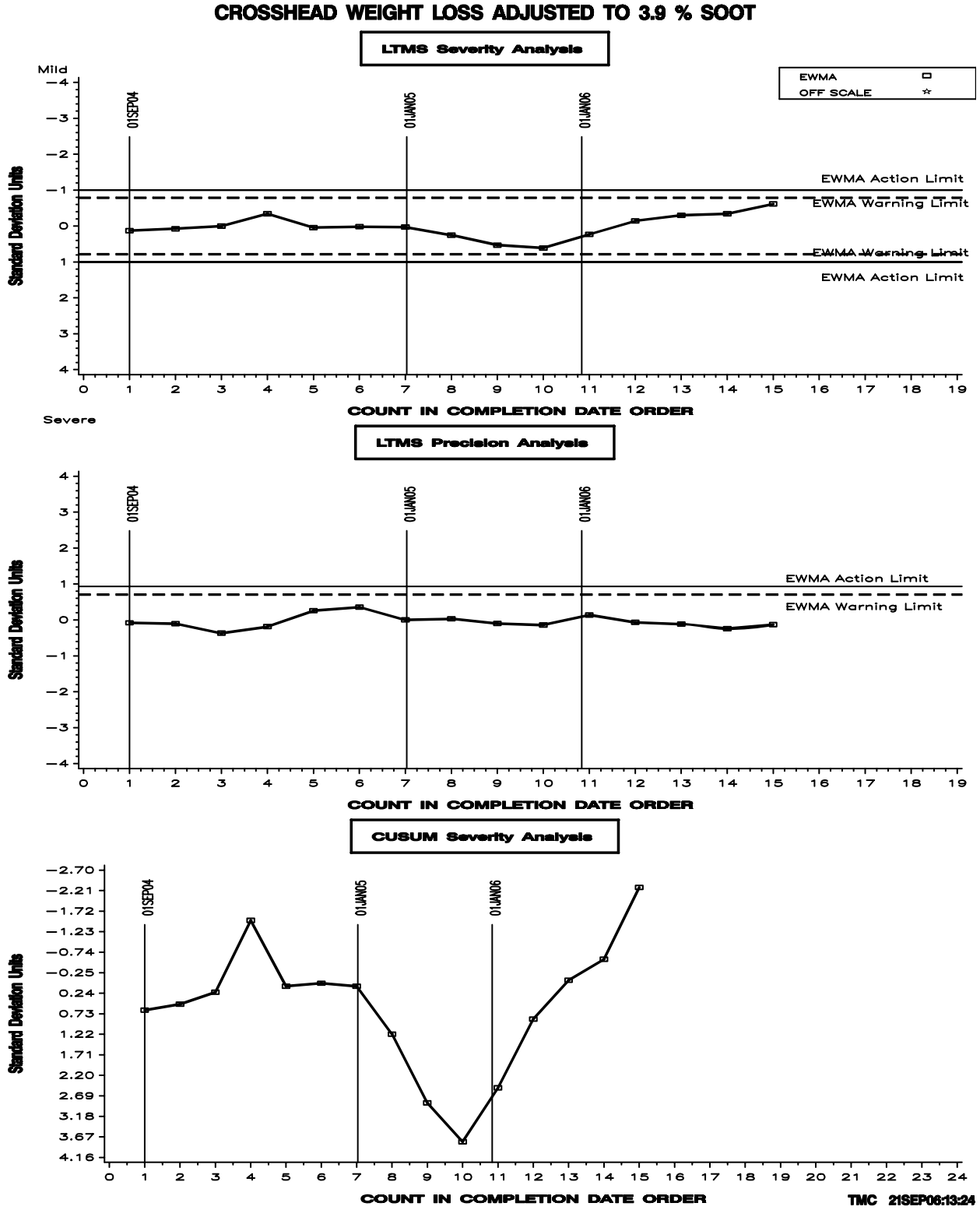

FIGURE 2
ISM INDUSTRY OPERATIONALLY VALID DATA

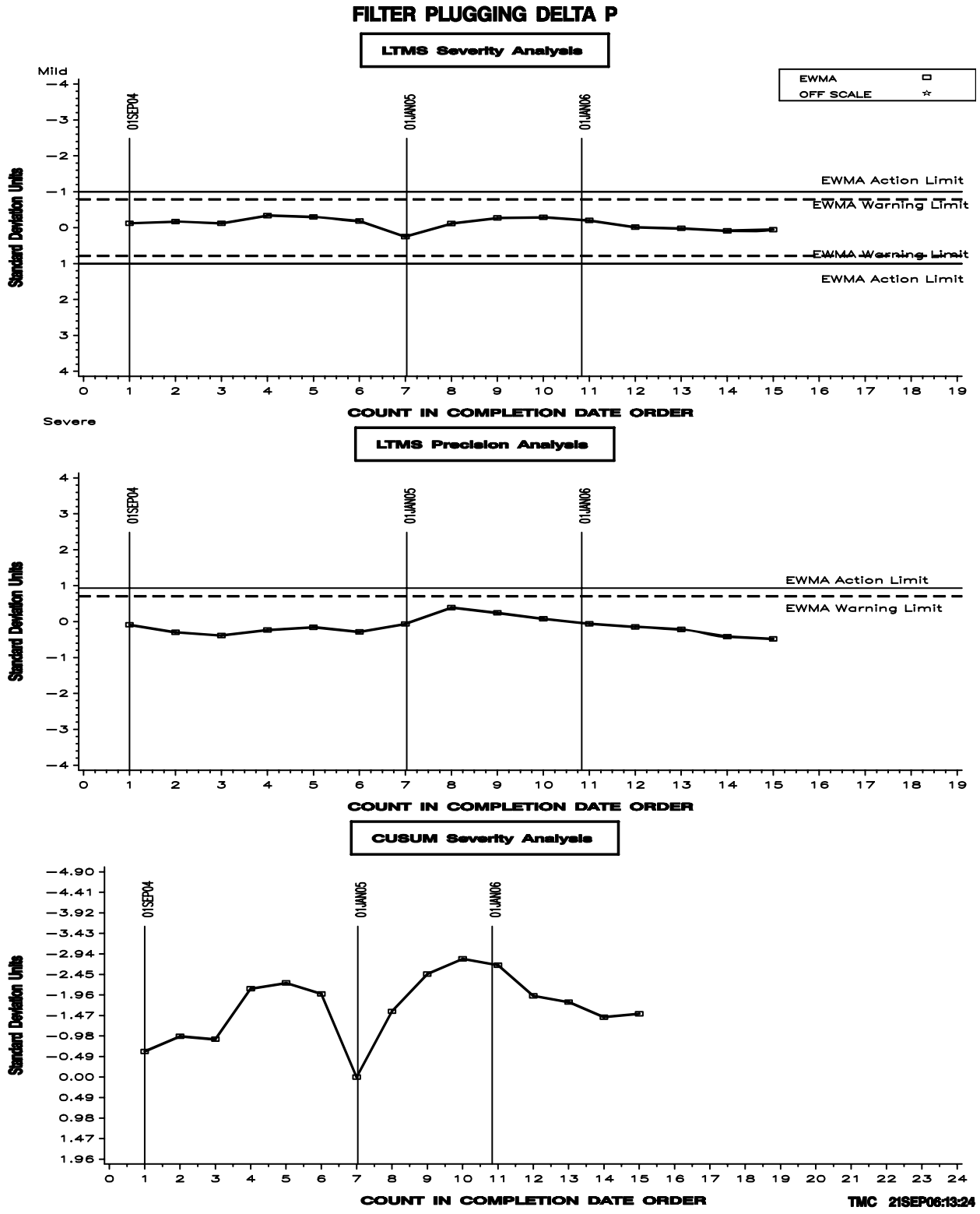

FIGURE 3
ISM INDUSTRY OPERATIONALLY VALID DATA

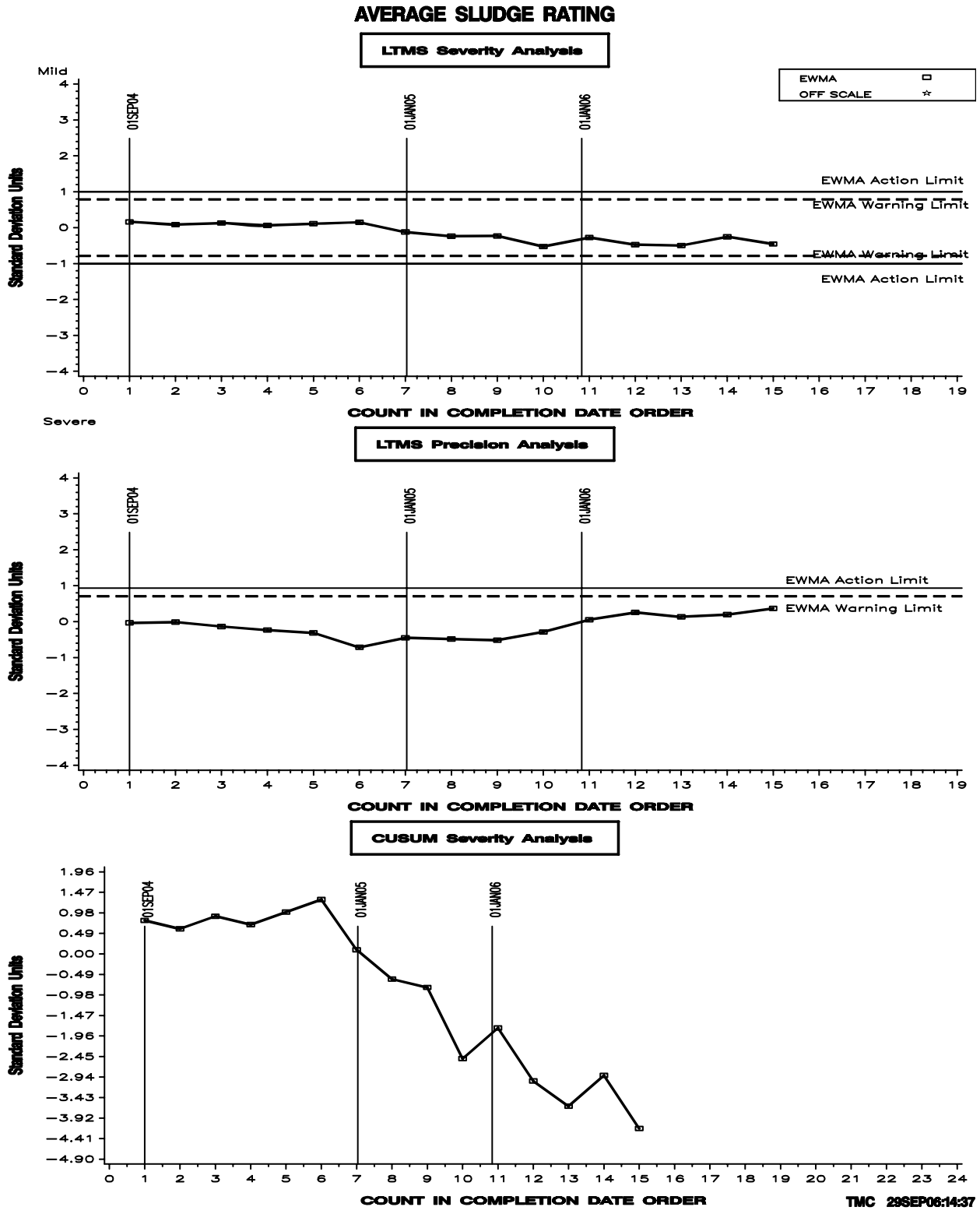

FIGURE 4

ISM INDUSTRY OPERATIONALLY VALID DATA

INJECTOR SCREW WEIGHT LOSS ADJUSTED TO 3.9% SOOT