

MEMORANDUM: 03-007

DATE: January 28, 2003

TO: Gordon R. Farnsworth, Chairman, Sequence VG Surveillance Panel

FROM: Richard Grundza

SUBJECT: Sequence VG Reference Oil Tests Statistics, Reference Oil 1006-2

The following are the statistics for Sequence VG reference oil 1006-2, based on ten test results. These targets are effective for reference oil tests completing on or after January 27, 2003.

Parameter	Mean	Standard Deviation
AES	8.64	0.31
RAC	9.37	0.14
AEV	9.26	0.10
APV	8.54	0.12
OSCR	1.092	0.782
HSR	None Allowed	

Figures 1 through 5 plot the results by laboratory and the Shewhart acceptance ranges for AES, RAC, AEV, APV and OSCR, respectively. Hot stuck ring data was not plotted since no hot stuck rings are allowed and no tests exhibited hot ring sticking. Please note that laboratory results in Figures 1 through 5 have not been severity adjusted. Figure 6 summarizes the reported results, uncorrected, while Figure 7 tabulates the severity adjusted results, used to calculate the targets. All results are in reported units except Oil Screen Clogging (OSCR), which has been transformed using $\ln(1+\text{result})$ transformation.

Attachments

REG/reg

c: Sequence VG Surveillance Panel
Sequence VG Test Engineers
John Zalar, TMC
Frank Farber, TMC
<ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencev/memos/mem03-007.pdf>

Distribution: email

Figure 1

Sequence VG (Reference Oil 1006-2)
Test Target Data Set and Shewart Severity Limits

Average Engine Sludge, Merits

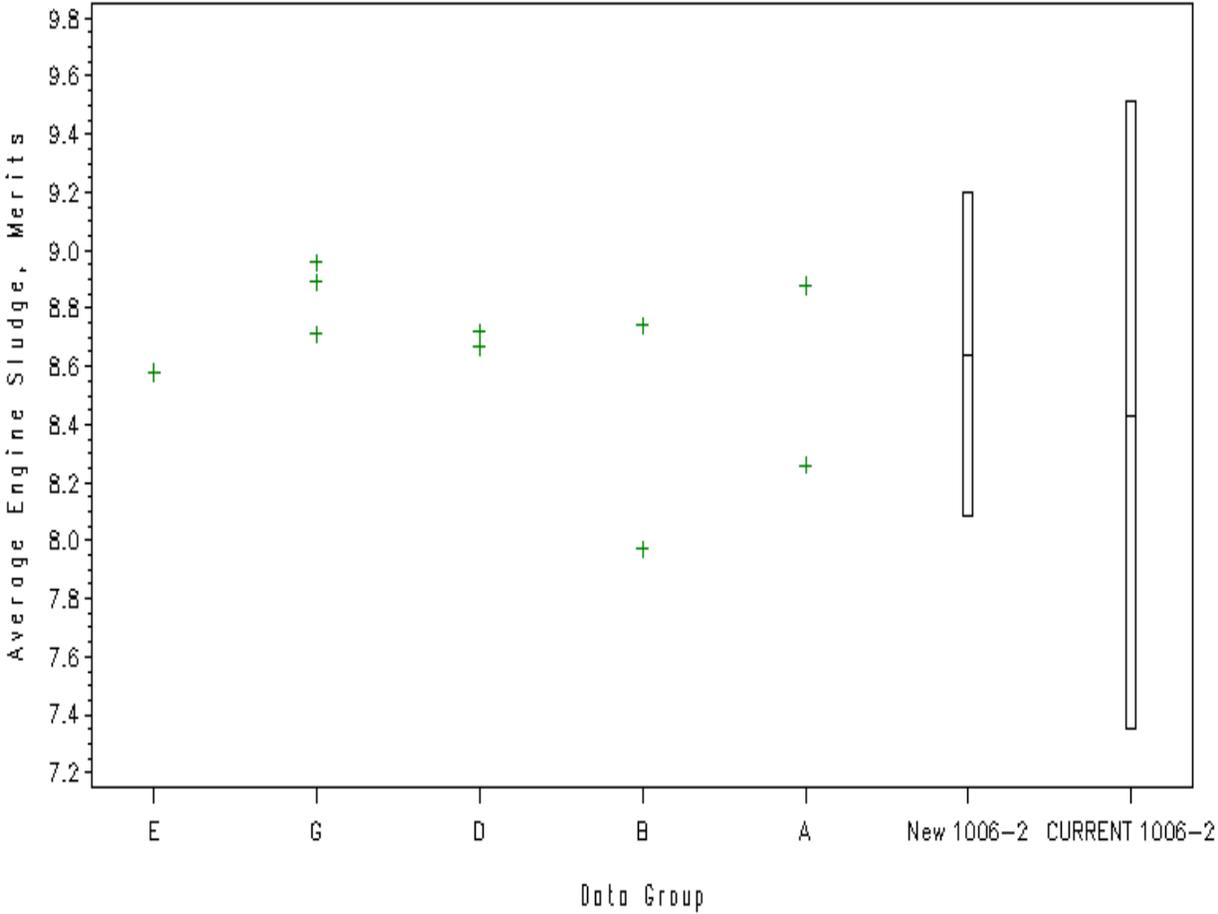


Figure 2

Sequence VG (Reference Oil 1006-2)
Test Target Data Set and Shewart Severity Limits

Rocker Cover Sludge, Merits

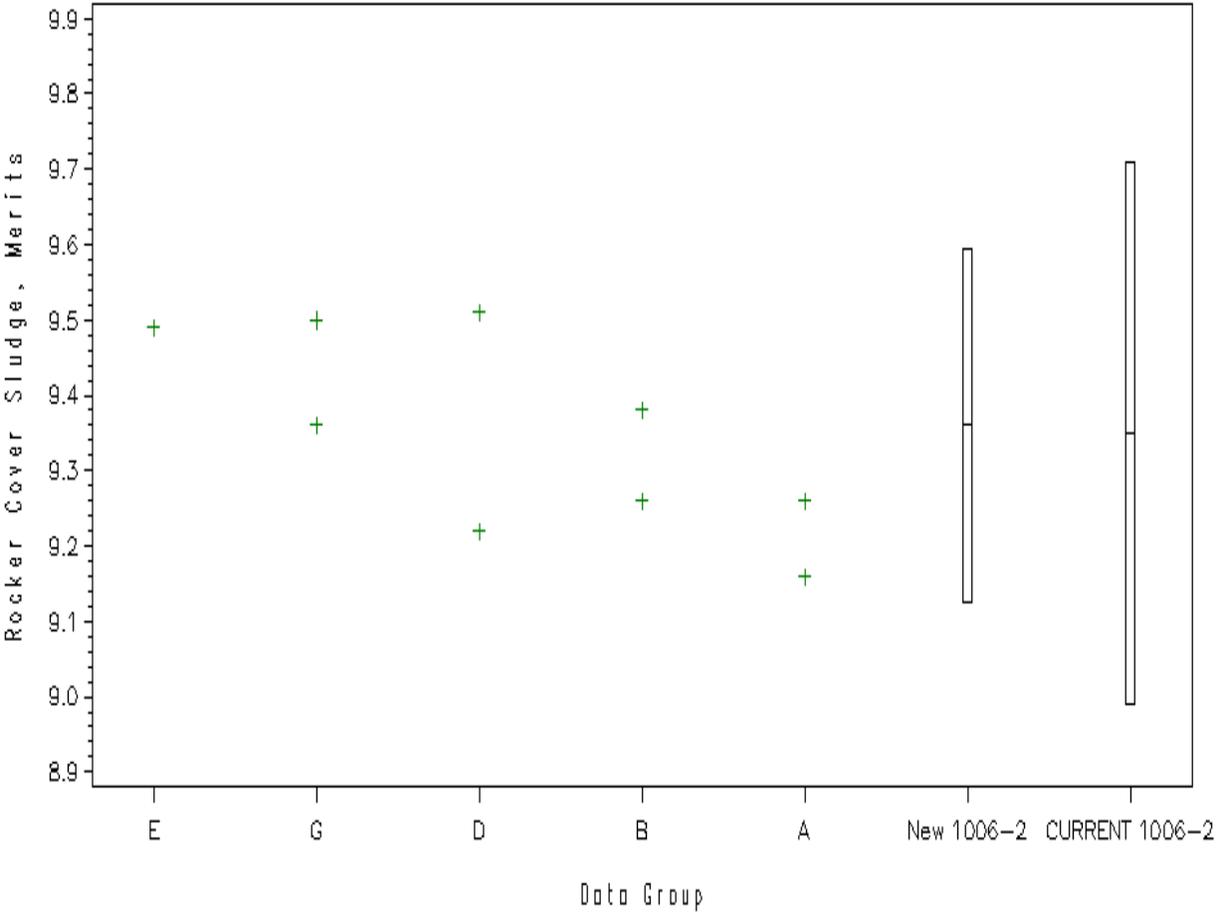


Figure 3

Sequence VG (Reference Oil 1006-2)
Test Target Data Set and Shewart Severity Limits

Average Engine Varnish, Merits

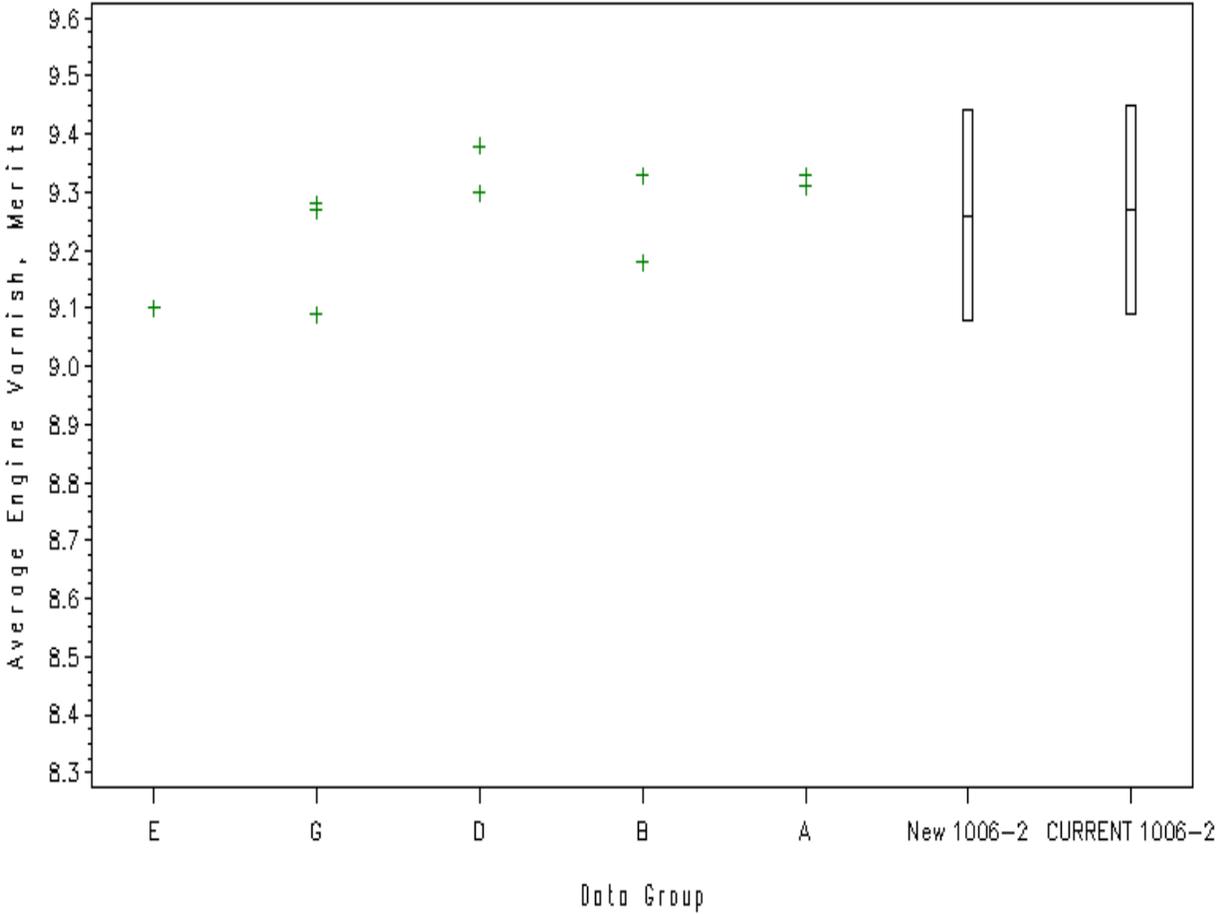


Figure 4

Sequence VG (Reference Oil 1006-2)
Test Target Data Set and Shewart Severity Limits

Average Piston Varnish, Merits

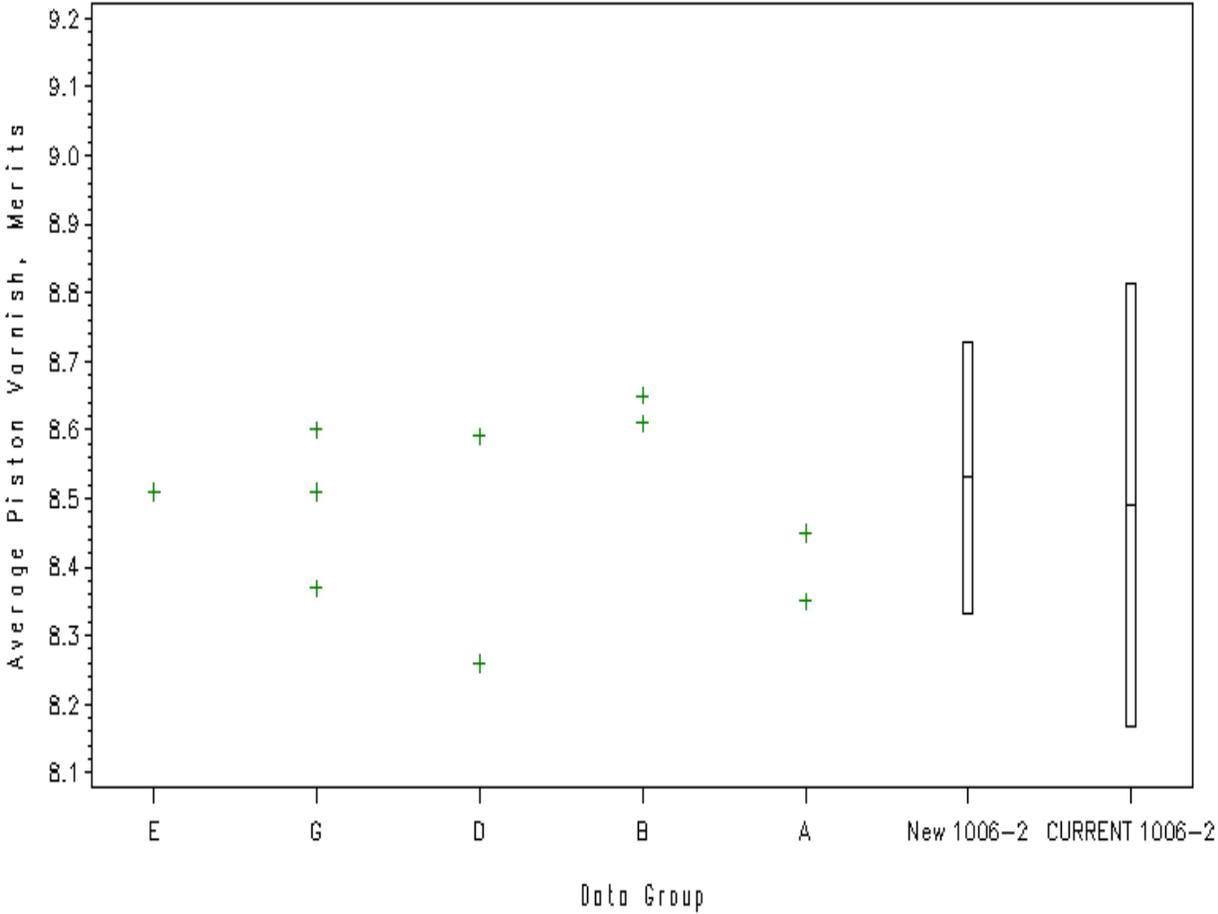


Figure 5

Sequence VG (Reference Oil 1006-2)
 Test Target Data Set and Shewart Severity Limits

Oil Screen Clogging, Transformed

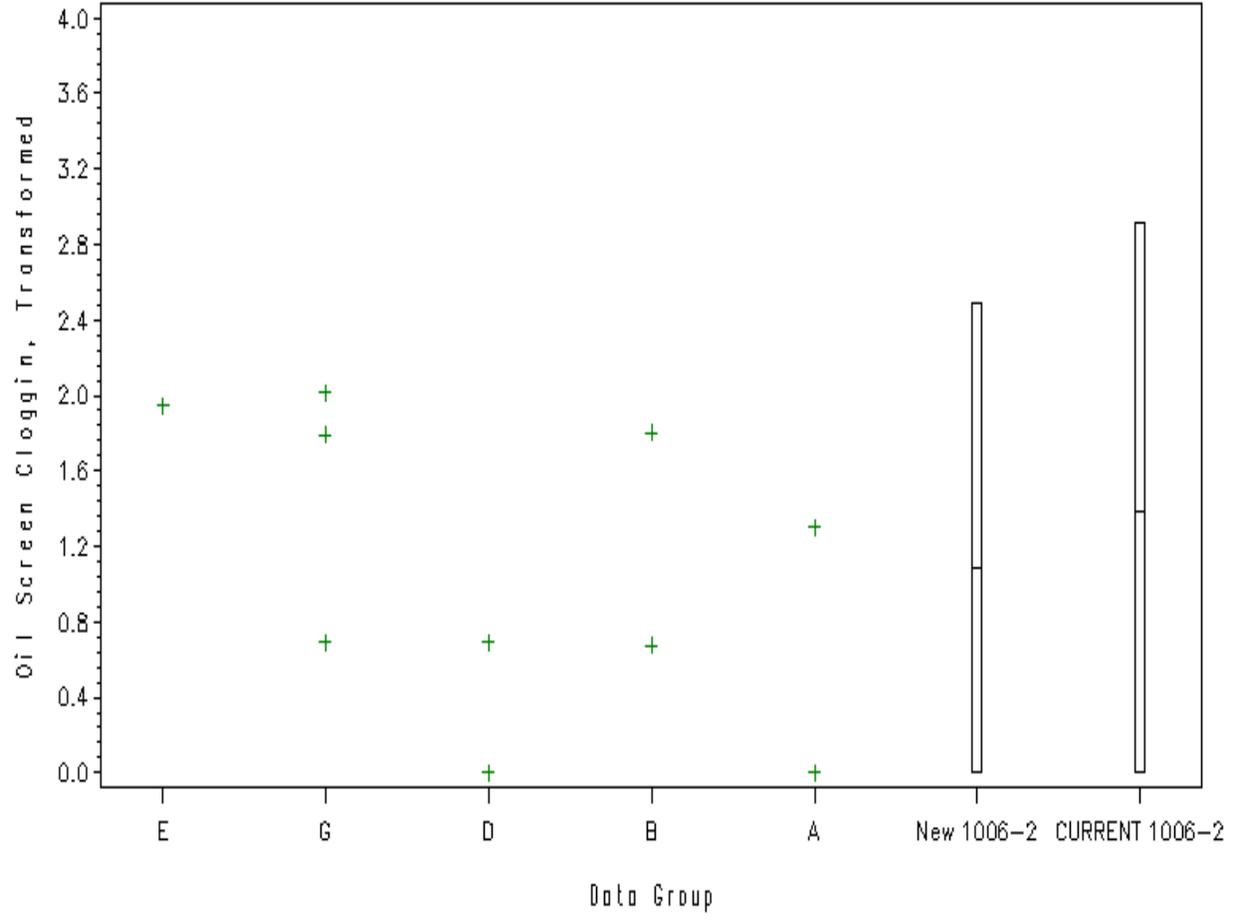


Figure 6

Lab	AES	RAC	AEV	APV	OSCR	HSR
A	8.26	9.16	9.37	8.35	0	0
B	8.74	9.38	9.18	8.61	1.3863	0
G	8.89	9.50	9.27	8.37	1.3863	0
A	8.88	9.26	9.33	8.45	0.6931	0
E	8.58	9.49	9.10	8.51	1.9459	0
G	8.96	9.50	9.09	8.51	1.7918	0
G	8.71	9.36	9.28	8.60	0.6931	0
B	7.97	9.26	9.33	8.65	2.3026	0
D	8.72	9.26	9.38	8.72	0	0
D	8.67	9.22	9.30	8.62	0.6931	0

Figure 7

Lab	AES	RAC	AEV	APV	OSCR	HSR
A	8.26	9.16	9.37	8.35	0.0000	0
B	8.74	9.38	9.18	8.61	0.6763	0
G	8.89	9.50	9.27	8.37	2.0163	0
A	8.88	9.26	9.33	8.45	1.3031	0
E	8.58	9.49	9.10	8.51	1.9459	0
G	8.96	9.50	9.09	8.51	1.7918	0
G	8.71	9.36	9.28	8.60	0.6931	0
B	7.97	9.26	9.33	8.65	1.8026	0
D	8.72	9.54	9.38	8.72	0	0
D	8.67	9.22	9.30	8.62	0.6931	0