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# ***Test Monitoring Center***

<http://astmtmc.cmu.edu>

## **D5800 VOL12 Reference Oil Replacement Round Robin**

**Final Summary of Data Received  
through 20130823**

**Summary Date 20130903 rev. 1**

**Prepared by Tom Schofield**

# D5800 VOL12 RR Final Summary

- Round Robin purpose is to select replacement reference oils for oils 52 and 55, which have significant long-term and ongoing severity trends in the test monitoring program.
- Meetings, teleconferences and a Procedure B workshop were held prior to running the RR
- Oils supplied are modern chemistries (presumably GF-5 technology)

# D5800 VOL12 RR Final Summary

- Eight Labs Participating (A, B, D, F, G, I, J, V)
- Fourteen Instruments
- Data Excluded From Statistical Estimates:
  - Twelve samples assigned but not run (lab A)
  - One test reported with no recent QC check run (Lab D, VOL12C)
  - One test with QC check severe of nominal acceptance range (Lab F, VOL12C)
  - One result tested as outlier (Lab A, VOL12C)

# D5800 RR Final Summary

Performance by Oil  
Operationally Valid Tests, One Outlier Excluded  
Mass % Volatiles Loss

Oil	SAE Grade	n	Mean	Sr	95% Lower	95% Upper
VOL12B	5W-20	27	20.20	1.06	18.1	22.3
VOL12C	5W-30	24	14.19	0.40	13.4	15.0
VOL12D	0W-20	27	12.52	0.52	11.5	13.5
VOL12E	5W-20	27	16.74	0.55	15.7	17.8
52	15W-40	33	13.75	0.61	12.6	14.9
55	10W-30	32	17.09	0.76	15.6	18.6
58	5W-30	37	15.20	0.72	13.8	16.6

# D5800 RR Final Summary

Performance by Severity  
Operationally Valid Tests, One Outlier Excluded  
Mass % Volatiles Loss

Oil	SAE Grade	n	Mean	Sr	95% Lower	95% Upper
VOL12D	0W-20	27	12.52	0.52	11.5	13.5
52	15W-40	33	13.75	0.61	12.6	14.9
VOL12C	5W-30	24	14.19	0.40	13.4	15.0
58	5W-30	37	15.20	0.72	13.8	16.6
VOL12E	5W-20	27	16.74	0.55	15.7	17.8
55	10W-30	32	17.09	0.76	15.6	18.6
VOL12B	5W-20	27	20.20	1.06	18.1	22.3

## D5800 RR Overall Severity by Lab and by Instrument Model

Lab or Model	n	Mean Yi (Delta/s)	Instrument Models Used at Lab
A	11	-0.19	NCK2, NCK25G
B	24	0.55	NCK2, NCK25G (2)
D	7	-0.06	SVT1
F	15	0.19	NCK2 (2)
G	16	-0.51	PS4000, SVT1
I	8	-0.86	NCK25G
J	16	0.61	NCK25G (2)
V	8	-0.99	SVT1
PS4000	8	-0.43	1 Lab, 1 Inst.
NCK2	31	0.10	3 Labs, 4 Inst.
NCK25G	43	0.32	4 Labs, 6 Inst.
SVT1	23	-0.57	3 Labs, 3 Inst.



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