

A5. Report Forms
M11 EGR
LUBRICANT PERFORMANCE TEST

VERSION M11EGR VERSION 20011120

METHOD CCCCCCCC

CONDUCTED FOR:

CC
 CCC

C	V = VALID; THE REFERENCE OIL/NON-REFERENCE OIL WAS EVALUATED IN ACCORDANCE WITH THE TEST PROCEDURE.
	I = INVALID; THE REFERENCE OIL/NON-REFERENCE OIL WAS NOT EVALUATED IN ACCORDANCE WITH THE TEST PROCEDURE.
	N = NOT INTERPRETABLE; THE NON-REFERENCE OIL RESULTS CANNOT BE INTERPRETED AND SHALL NOT BE USED FOR MULTIPLE TEST ACCEPTANCE.

CC	NR = Non-Reference Oil Test
	RO = Reference Oil Test

STAND: CCCCC	ENGINE NO.: CCCCCCCC	ENGINE RUN NO.: CCCC
END OF TEST DATE: YYYYMMDD		END OF TEST TIME: HH:MM
OIL CODE: CCC		
FORMULATION/STAND CODE: CC-CCCCCCCCC-C-C-CCCCCC-CC-CC-CCCC		
ALTCODE1: CCCCCCCCCCCCCC	ALTCODE2: CCCCCCCCCCCCCC	ALTCODE3: CCCCCCCCCCCCCC

In my opinion this test CCCCCCCC been conducted in a valid manner in accordance with the Test Procedure and the appropriate amendments through the information letter system. The remarks included in this report describe the anomalies associated with this test.

SUBMITTED BY: CCC

Testing Laboratory

Signature Image

Signature

CC

Typed Name

CC

Typed Name

**M11 EGR LUBRICANT PERFORMANCE TEST
Test Results Summary
Form 4**

Laboratory: <i>CC</i>	EOT Date: <i>YYYYMMDD</i>	EOT Time: <i>HH:MM</i>
Stand: <i>CCCCC</i>	Engine: <i>CCCCCCCC</i>	Engine Run No.: <i>CCCC</i>
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>		
Oil Code: <i>CC</i> Engine Kit S/N: <i>CCCCCCCCCCCC</i>		

DATE TEST STARTED	<i>YYYYMMDD</i>
START TIME	<i>HH:MM</i>
TEST LENGTH	<i>S1234</i>
TMC OIL CODE ^A	<i>CCCCCC</i>
LABORATORY OIL CODE	<i>CCCCCCCCCCCCCCCCCCCC</i>
SAE VISCOSITY	<i>CCCCCC</i>
TGA SOOT % AT 50 h (2.8 minimum)	<i>S123.1</i>
TGA SOOT % AT 250 h (8.0 - 9.5)	<i>S123.1</i>
TOTAL OIL CONSUMPTION, kg	<i>S12.12</i>

	Adjusted Average Crosshead Mass Loss (mg)	Filter Plugging Delta P (kPa)	Average Sludge Rating (merits)	Avg. Top Ring Weight Loss (mg)
Original Result	<i>S12.1234</i>	<i>S123</i>	<i>S1.1</i>	<i>S123.1</i>
Transformed Result ^B	<i>S12.1234</i>	<i>S12.1234</i>	<i>S1.1234</i>	<i>S123.1234</i>
Correction Factor ^B	<i>S12.1234</i>	<i>S1.1234</i>	<i>S1.1234</i>	<i>S1.1234</i>
Corrected Transformed Result ^B	<i>S12.1234</i>	<i>S12.1234</i>	<i>S1.1234</i>	<i>S123.1234</i>
Severity Adjustment ^B	<i>S12.1234</i>	<i>S1.1234</i>	<i>S1.1234</i>	<i>S1.1234</i>
Final Transformed Result ^B	<i>S12.1234</i>	<i>S12.1234</i>	<i>S1.1234</i>	<i>S123.1234</i>
Final Result	<i>S123.1</i>	<i>S123</i>	<i>S1.1</i>	<i>S123.1</i>

LAST STAND REFERENCE RESULTS

TEST NUMBER: <i>CCCCC - CCCCCCCC - CCCC</i>
OILCODE <i>CC</i>
TEST LENGTH <i>S1234</i>
TMC OIL CODE <i>CCCCCC</i>
EOT DATE <i>YYYYMMDD</i>
EOT TIME <i>HH:MM</i>
STAND CALIBRATION EXPIRATION DATE <i>YYYYMMDD</i>
TGA SOOT % AT 50 h (2.8 minimum) <i>S123.1</i>
TGA SOOT % AT 250 h (8.5 - 9.5) <i>S123.1</i>
TOTAL OIL CONSUMPTION, kg <i>S12.12</i>

	Adjusted Average Crosshead Mass Loss (mg)	Filter Plugging Delta P (kPa)	Average Sludge Rating (merits)	Avg. Top Ring Weight Loss (mg)
Original Result	<i>S12.1234</i>	<i>S123</i>	<i>S1.1</i>	<i>S123.1</i>
Transformed Result ^B	<i>S12.1234</i>	<i>S12.1234</i>	<i>S1.1234</i>	<i>S123.1234</i>
Correction Factor ^B	<i>S12.1234</i>	<i>S1.1234</i>	<i>S1.1234</i>	<i>S1.1234</i>
Corrected Transformed Result ^B	<i>S12.1234</i>	<i>S12.1234</i>	<i>S1.1234</i>	<i>S123.1234</i>
Final Transformed Result ^B	<i>S12.1234</i>	<i>S12.1234</i>	<i>S1.1234</i>	<i>S123.1234</i>
Final Result	<i>S123.1</i>	<i>S123</i>	<i>S1.1</i>	<i>S123.1</i>

^A Reference Tests Only

^B Filter Plugging Delta P Value in Transformed Units

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 5
OPERATIONAL SUMMARY**

Laboratory	CC	EOT Date	YYYYMMDD	EOT Time	HH:MM
Test Number	Stand:	CCCC	Engine:	CCCCCCC	Engine Run No.: CCCC
Formulation/Stand Code: CC-CCCCCCCCC-C-C-CCCCC-CC-CCCC-CC-CC-CCCC					
Oil Code: CCC					

Parameter	Units	QI Threshold	EOT ^A QI	Target	Average	Samples ^B	BQD ^C	Over/Under Range ^D
Speed	r/min	0.000	S12.123	1800	S123456	S1234	S1234	S1234
Fuel Flow	kg/h	0.000	S12.123	58.0	S123.1	S1234	S1234	S1234
Coolant Out	°C	0.000	S12.123	65.5	S123.1	S1234	S1234	S1234
Fuel In	°C	0.000	S12.123	40	S12.1	S1234	S1234	S1234
Oil Gallery	°C	0.000	S12.123	115	S123.1	S1234	S1234	S1234
Intake Manifold	°C	0.000	S12.123	80.0	S12.1	S1234	S1234	S1234
Exhaust	kPa	0.000	S12.123	107	S123.1	S1234	S1234	S1234

Parameter	Units	Typical Values ^E	Average
Torque	N-m	TBD	S1234.1
Power	kW	TBD	S123.1
EGR Rate	%	Record	S123.1
Intake CO ₂	%	0.97 - 1.09	S1.12
Blowby	L/min	TBD	S12.1
Coolant In	°C	TBD	S123.1
Intake Air	°C	TBD	S12.1
Pre-Turbine (F)	°C	TBD	S123.1
Pre-Turbine (R)	°C	TBD	S123.1
Tailpipe	°C	TBD	S123.1
Fuel	kPa	TBD	S1234.1
Oil Gallery	kPa	TBD	S123.1
Coolant	kPa	99 - 107	S123.1
Intake Manifold	kPa	TBD	S123.1
Crankcase	kPa	TBD	S1.1
Intake Air	kPa	TBD	S12.12

^A QI values above the threshold are acceptable by the M11 Surveillance Panel. QI values below the threshold may not be considered acceptable based on an engineering review. See the comments section of this report.

^B Total number of data points taken

^C Number of Bad Quality Data points not used in the calculation of the statistical measures

^D Number of points clipped by over/under range limits

^E Typical values determined from reference oil test database

^F Stage B EGR Rate shall be within specified range for test to be operationally valid.

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 6
CROSSHEAD MASS LOSS SUMMARY**

Laboratory <i>CC</i>	EOT Date <i>YYYYMMDD</i>	EOT Time <i>HH:MM</i>
Test Number		
STAND: <i>CCCCC</i>	ENGINE: <i>CCCCCCCC</i>	ENGINE RUN NO.: <i>CCCC</i>
FORMULATION/STAND CODE: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>		
OIL CODE: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>		

LOCATION	SERIAL NO.	PRETEST MASS (g)	EOT MASS (g)	MASS LOSS (mg)
1E	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
1I	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
2I	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
2E	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
3E	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
3I	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
4I	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
4E	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
5E	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
5I	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
6I	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>
6E	<i>CCCCC</i>	<i>S123.1234</i>	<i>S123.1234</i>	<i>S12.1</i>

INTAKE/EXHAUST SUMMARY	INTAKE		EXHAUST	
	As Measured	Outlier Screened	As Measured	Outlier Screened
Average Crosshead Mass Loss (mg)	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>
Minimum Crosshead Mass Loss (mg)	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>
Maximum Crosshead Mass Loss (mg)	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>
Standard Deviation (mg)	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>
Outlier Crossheads Locations ^A	<i>CCCCCCCC</i>		<i>CCCCCCCC</i>	

^A Location Designation. Example: 3E

Overall Summary	As Measured	Outlier Screened	Adjusted to X.X% Soot
Average Crosshead Mass Loss (mg)	<i>S12.12</i>	<i>S12.12</i>	<i>S12.1234</i>
Minimum Crosshead Mass Loss (mg)	<i>S12.1</i>	<i>S12.1</i>	
Maximum Crosshead Mass Loss (mg)	<i>S12.1</i>	<i>S12.1</i>	
Standard Deviation (mg)	<i>S12.12</i>	<i>S12.12</i>	

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 8
SLUDGE RATING SUMMARY**

Laboratory: <i>CC</i>	EOT Date: <i>YYYYMMDD</i>	EOT Time: <i>HH:MM</i>
TEST NUMBER		
STAND: <i>CCCCC</i>	ENGINE: <i>CCCCCCCC</i>	ENGINE RUN NO.: <i>CCCC</i>
FORMULATION/STAND CODE: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCCC</i>		
OIL CODE: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>		

SLUDGE RATING SUMMARY

Sludge Depth	Valve Cover % of Area	Valve Cover Volume Factor	Oil Pan % of Area	Oil Pan Volume Factor
1/4A	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
1/2A	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
3/4A	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
A	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
AB	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
B	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
BC	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
C	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
D	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
E	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
F	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
G	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
H	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
I	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
J	<i>S12</i>	<i>S1.12</i>	<i>S12</i>	<i>S1.12</i>
	Total Volume Factor:	<i>S12.12</i>	Total Volume Factor:	<i>S12.12</i>
	MERIT RATING:	<i>S12.12</i>	MERIT RATING:	<i>S12.12</i>
	Average Sludge Rating:		<i>S1.1</i>	

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 9
ROD BEARING MASS LOSS**

Laboratory	CC	EOT Date	YYYYMMDD	EOT Time	HH:MM
Test Number					
STAND:	CCCCC	ENGINE:	CCCCCCCC	ENGINE RUN NO.:	CCCC
FORMULATION/STAND CODE: CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCCC					
OIL CODE: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC					

CYLINDER NUMBER	BEARING LOCATION	PRE-TEST MASS (g)	POST-TEST MASS (g)	MASS LOSS (mg)
1	UPPER	S123.1234	S123.1234	S123.1
	LOWER	S123.1234	S123.1234	S123.1
2	UPPER	S123.1234	S123.1234	S123.1
	LOWER	S123.1234	S123.1234	S123.1
3	UPPER	S123.1234	S123.1234	S123.1
	LOWER	S123.1234	S123.1234	S123.1
4	UPPER	S123.1234	S123.1234	S123.1
	LOWER	S123.1234	S123.1234	S123.1
5	UPPER	S123.1234	S123.1234	S123.1
	LOWER	S123.1234	S123.1234	S123.1
6	UPPER	S123.1234	S123.1234	S123.1
	LOWER	S123.1234	S123.1234	S123.1

	BEARING MASS LOSS
AVERAGE (mg)	S123.1
MINIMUM (mg)	S123.1
MAXIMUM (mg)	S123.1
STANDARD DEVIATION (mg)	S1.12

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 12**

PISTON 2 DEPOSIT RATINGS

Laboratory CC	EOT Date YYYYMMDD	EOT Time HH:MM	
TEST NUMBER			
STAND: CCCCC	ENGINE: CCCCCCCC		
FORMULATION/STAND CODE: CC-C-CCCCCCCCC-C-C-CCCCCC-CC-CC-CCCC			
OILCODE: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
ENGINE RUN NO.: CCCC			

DEP. FACTOR	GROOVES				LANDS				DEP FACTOR	GROOVES				LANDS				OIL COOLING GALLERY (2)		UNDER CROWN (1)		
	NO. 1		NO. 2		NO. 1		NO. 2			NO. 3		NO. 4		NO. 3		NO. 4		A, %	DEM.	A, %	DEM.	
	A, %	DEM.	A, %	DEM.	A, %	DEM.	A, %	DEM.		A, %	DEM.	A, %	DEM.	A, %	DEM.	A, %	DEM.	A, %	DEM.	A, %	DEM.	
CARBON																						
HC-1.0	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12
MC-0.5	S12	S12.12																				
LC-.25	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S123	S123.12	S12	S12.123	S12	S1.123
TOTAL	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S123	S123.12	S12	S1.123	S12	S1.123
VARNISH																						
8 - 9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12						
7 - 7.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S123	S123.12	S12	S1.123
6 - 6.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12						
5 - 5.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12						
4 - 4.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S123	S123.12	S12	S1.123
3 - 3.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12						
2 - 2.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12						
1 - 1.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S123	S123.12	S12	S1.123
>0 - 0.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12						
TOTAL	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	S123	S123.12	S12	S1.123
Rating	S12.12		S12.12		S12.12		S12.12		S12.12		S12.12		S12.12		S12.12		S12.12	S123.12		S1.123		
TGC %																	UNWEIGHTED DEP.		T.L. CARBON		T.L. FLAKED CARBON %	
S12.12																	S12.123		S12.12		S123.12	

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 16
PISTON 6 DEPOSIT RATINGS**

Laboratory	CC	EOT Date	YYYYMMDD	EOT Time	HH:MM
TEST NUMBER					
STAND:	CCCC	ENGINE:	CCCCCCCC	ENGINE RUN NO.:	CCCC
FORMULATION/STAND CODE:	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCC				
OILCODE:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				

DEP. FACTOR	GROOVES						LANDS		DEP FACTOR	GROOVES				OIL COOLING GALLERY (2)		UNDER CROWN (1)	
	NO. 1		NO. 2		NO. 1		NO. 2			NO. 3		NO. 4		GALLERY (2)		CROWN (1)	
	A, %	DEM.	A, %	DEM.	A, %	DEM.	A, %	DEM.		A, %	DEM.	A, %	DEM.	A, %	DEM.	A, %	DEM.
CARBON																	
HC-1.0	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
MC-0.5	S12	S12.12															
LC-.25	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
TOTAL	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
VARNISH																	
8 - 9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
7 - 7.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	7.5								
6 - 6.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
5 - 5.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
4 - 4.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	4.5								
3 - 3.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
2 - 2.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
1 - 1.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
>0 - 0.9	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12	1.5								
TOTAL	S12	S12.12	S12	S12.12	S12	S12.12	S12	S12.12									
Rating	S12.12	S12.12	S12.12	S12.12	S12.12	S12.12	S12.12	S12.12									
TGC %																	
S12.12	UNWEIGHTED DEP. S12.123								T.L. CARBON S12.12				T.L. FLAKED CARBON % S123.12				

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 17
RING MASS LOSS SUMMARY**

Laboratory	CC	EOT Date	YYYYMMDD	EOT Time	HH:MM
TEST NUMBER					
STAND:	CCCC	ENGINE:	CCCCCCCC	ENGINE RUN NO.:	CCCC
FORMULATION/STAND CODE:	CC-CCCCCCCCCC-C-CCCCCC-C-CC-CC-CCCC				
OILCODE:	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				

CYLINDER	TOP RING			SECOND RING			OIL RING		
	MASS (g)		MASS LOSS (mg)	MASS (g)		MASS LOSS (mg)	MASS (g)		MASS LOSS (mg)
	PRETEST	EOT		PRETEST	EOT		PRETEST	EOT	
1	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1
2	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1
3	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1
4	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1
5	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1
6	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1	S12.1234	S12.1234	S123.1
AVERAGE MASS LOSS (mg)			S123.1			S123.1			S123.1
STD. DEV. MASS LOSS (mg)			S12.12			S12.12			S12.12
MAXIMUM MASS LOSS (mg)			S123.1			S123.1			S123.1
MINIMUM MASS LOSS (mg)			S123.1			S123.1			S123.1

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 19
TEST FUEL ANALYSIS (LAST BATCH)**

Laboratory <i>CC</i>	EOT Date <i>YYYYMMDD</i>	EOT Time <i>HH:MM</i>
TEST NUMBER		
STAND: <i>CCCCC</i>	ENGINE: <i>CCCCCCCC</i>	ENGINE RUN NO.: <i>CCCC</i>
FORMULATION/STAND CODE: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>		
OILCODE: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>		

FUEL SUPPLIER	FUEL BATCH IDENTIFIER
<i>CCCCCCCCCCCCCCCCCCCC</i>	<i>CCCCCCCCCCCCCCCC</i>

Measurement	Specifications	Analysis		Test Method
		NEW	EOT	
Total Sulfur, % Weight	0.04 - 0.05	<i>SI.12</i>	<i>SI.12</i>	D 2662
Gravity, °API	34.5 - 36.5	<i>SI.1</i>	<i>SI.1</i>	D 1298
Hydrocarbon Composition				
Aromatics % Volume	28 - 33	<i>SI.1</i>		D 1319
Olefin	Report	<i>SI2.1</i>		D 1319
Cetane Index	Report	<i>SI.1</i>		D 4737
Cetane Number	42 - 48	<i>SI.1</i>		D 613
Copper Strip Corrosion	1 Maximum	<i>SI23</i>		D 130
Flash Point, °C	54 Maximum	<i>SI23</i>		D 93
Pour Point, °C	-18 Maximum	<i>SI23</i>		D 97
Carbon Residue on 10% Residuum, %	0.35 Maximum	<i>SI.12</i>		D 524 (10% Bottoms)
Water & Sediment, % Volume	0.05 Maximum	<i>SI2.12</i>		D 2709
Viscosity, cSt @ 40 °C	2.4 - 3.0	<i>SI.1</i>		D 445
Total Acid Number	0.05 Maximum	<i>SI.123</i>		D 664
Strong Acid Number	0.00 Maximum	<i>SI.1</i>		D 664
Accelerated Stability	tbd	<i>SI.1</i>		D 2274
Saturates, %	Report	<i>SI2.1</i>		D 1319
Cloud Point, °C	Report	<i>SI23</i>		D 2500
Distillation, °C				
IBP	Report	<i>SI234</i>		D 86
10%	Report	<i>SI234</i>		D 86
50%	Report	<i>SI234</i>		D 86
90%	282 - 338	<i>SI234</i>		D 86
EP	Report	<i>SI234</i>		D 86

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 20
INJECTOR ADJUSTING SCREW MASS LOSS**

Laboratory <i>CC</i>	EOT Date <i>YYYYMMDD</i>	EOT Time <i>HH:MM</i>
TEST NUMBER		
STAND: <i>CCCCC</i>	ENGINE: <i>CCCCCCCC</i>	ENGINE RUN NO.: <i>CCCC</i>
FORMULATION/STAND CODE: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCCC</i>		
OILCODE: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>		

SCREW #	PRE-TEST MASS, g	POST-TEST MASS, g	MASS LOSS, mg
1	<i>S12.1234</i>	<i>S12.1234</i>	<i>S123.1</i>
2	<i>S12.1234</i>	<i>S12.1234</i>	<i>S123.1</i>
3	<i>S12.1234</i>	<i>S12.1234</i>	<i>S123.1</i>
4	<i>S12.1234</i>	<i>S12.1234</i>	<i>S123.1</i>
5	<i>S12.1234</i>	<i>S12.1234</i>	<i>S123.1</i>
6	<i>S12.1234</i>	<i>S12.1234</i>	<i>S123.1</i>
TOTAL			<i>S123.1</i>
AVERAGE			<i>S123.1</i>

**M11 EGR LUBRICANT PERFORMANCE TEST
FORM 22
CHARACTERISTICS OF THE DATA ACQUISITION SYSTEM**

Laboratory	CC	EOT Date	YYYYMMDD	EOT Time	HH:MM
TEST NUMBER					
STAND:	CCCCC	ENGINE:	CCCCCCCC	ENGINE RUN NO.:	CCCC
FORMULATION/STAND CODE: CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC					
OIL CODE: CCC					

PARAMETER (1)	SENSING DEVICE (2)	CALIBRATION FREQUENCY (3)	RECORD DEVICE (4)	OBSERVATION FREQUENCY (5)	RECORD FREQUENCY (6)	LOG FREQUENCY (7)	SYSTEM RESPONSE (8)
Temperature							
Oil Gallery	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Fuel In	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Intake Air	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Intake Man.	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Pre-Turb.	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Cool. Out	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Pressure							
Inlet Air	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Exhaust	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Oil Gallery	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Other							
Fuel Flow	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Speed	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC
Load	CCCCCCCCCC	CCCCCCCCCC	CCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC	CCCCCCCCCC

LEGEND:

- (1) OPERATING PARAMETER
- (2) THE TYPE OF DEVICE USED TO MEASURE TEMPERATURE, PRESSURE OR FLOW
- (3) FREQUENCY AT WHICH THE MEASUREMENT SYSTEM IS CALIBRATED
- (4) THE TYPE OF DEVICE
DL - AUTOMATIC DATA LOGGER
C/D - COMPUTER, USING DIRECT I/O ENTRY
- (5) DATA ARE OBSERVED BUT ONLY IF RECORDED OFF SPEC.
- (6) DATA ARE RECORDED BUT ARE NOT RETAINED AT EOT
- (7) DATA ARE LOGGED AS PERMANENT RECORD, NOTE SPECIFY IF:
SS - SNAPSHOT TAKEN AT SPECIFIED FREQUENCY
AG/X AVERAGE OF X DATA POINTS AT SPECIFIED FREQUENCY
- (8) TIME IN SECONDS FOR THE OUTPUT TO REACH 63.2% OF FINAL VALUE FOR STEP CHANGE AT INPUT