

REPORT ON SEQUENCE VG EVALUATION

CONDUCTED FOR

CC
 CCC

C	V = VALID
	I = INVALID
	N = RESULTS CAN NOT BE INTERPRETED AS REPRESENTATIVE OF OIL PERFORMANCE (NON-REFERENCE OIL) AND SHALL NOT BE USED IN DETERMINING AN AVERAGE TEST RESULT USING MULTIPLE TEST ACCEPTANCE CRITERIA.

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

Test Number			
Test Stand: CCCCC	Runs Between Calibration Tests: CCCC	Total Runs on Test Stand: CCCCC	
Date Completed: YYYYMMDD	End of Test Time: HH:MM		
Oil Code: CCC			
Formulation/Stand Code: CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCCC			
Alternate Codes:	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC

In my opinion this test CCCCCC been conducted in a valid manner in accordance with the VG Test Procedure (RR:) and the appropriate amendments through the Information Letter system. The remarks included in the report describe the anomalies associated with this test.

SUBMITTED BY: _____
 Testing Laboratory

Signature Image
 Signature

 Typed Name

 Title

**SEQUENCE VG
FORM 4
TEST RESULT SUMMARY
NON-REFERENCE & REFERENCE OIL TESTS**

Laboratory: <i>CC</i>	Stand: <i>CCCCC</i>	Stand Runs: <i>CCCC</i>	Oil Code: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>
Date Started: <i>YYMMDD</i>	Time Started: <i>HH:MM</i>	Date Completed: <i>YYMMDD</i>	Time Completed: <i>HH:MM</i>
Formulation/Stand Code: <i>CC-CCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>			

Lab Engine Number: <i>CCCCCC</i>	SAE Viscosity: <i>CCCCCC</i>
Test Length: <i>S1234</i>	Fuel Batch: <i>CCCCCC</i>
Industry Oil Code: <i>CCCCCC</i>	

CRITICAL PARAMETERS						
	Average Engine Sludge, merits	Rocker Cover Sludge, merits	Average Engine Varnish, merits	Average Piston Skirt Varnish, merits	Oil Screen Sludge, % Area	Number of Hot Stuck Rings
Original Result	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S123</i>	<i>S1</i>
Transformed Result					<i>S1.1234</i>	
Industry Correction Factor	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S1.1234</i>	<i>S1</i>
Corrected Transformed Result					<i>S1.1234</i>	
Severity Adjustment	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S1.1234</i>	<i>S1</i>
Final Transformed Result					<i>S1.1234</i>	
Final Original Unit Result	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>

Clogging Information		Additional Information	
Oil Screen Debris, % Area	<i>S123</i>	Number of Cold Stuck Rings	<i>S1</i>
Oil Ring Clogging, % Area	<i>S123</i>	Average Blowby Stage II, L/min	<i>S12.12</i>
PCV Valve @ 25 kPa, %	<i>S12.12</i>	Oil Consumption, grams	<i>S123456</i>
PCV Valve @ 60 kPa, %	<i>S12.12</i>		

Last Reference Oil Test Calibrating Stand Information - Fill Out For Non-reference Oil Tests Only						
Stand: <i>CCCCC</i>	Total Runs on Test Stand: <i>CCCCC</i>	Oilcode: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>				
Industry Oil Code: <i>CCCCCC</i>	Engine Number: <i>CCCCCC</i>	SAE Viscosity: <i>CCCCCC</i>	Date Completed: <i>YYMMDD</i>			
Test Length: <i>S1234</i>	Fuel Batch: <i>CCCCCC</i>	Calibration Expiration Date: <i>YYMMDD</i>				
Clogging Information		Additional Information				
Oil Screen Debris, % Area	<i>S123</i>	Number of Cold Stuck Rings		<i>S1</i>		
Oil Ring Clogging, % Area	<i>S123</i>	Average Blowby Stage II, L/min		<i>S12.12</i>		
PCV Valve @ 25 kPa, %	<i>S12.12</i>	Oil Consumption, grams		<i>S123456</i>		
PCV Valve @ 60 kPa, %	<i>S12.12</i>					
	Average Engine Sludge, merits	Average Rocker Cover Sludge, merits	Average Engine Varnish, merits	Average Piston Skirt Varnish, merits	Oil Screen Sludge, % Area	Number of Hot Stuck Rings
Final Original Unit Result	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S123</i>	<i>S1</i>

FIG A7.4 Test Result Summary

**SEQUENCE VG
FORM 5
TEST RESULT SUMMARY
NON-REFERENCE & REFERENCE OIL TESTS**

Laboratory: <i>CC</i>	Stand: <i>CCCC</i>	Stand Runs: <i>CCCC</i>	Oil Code: <i>cc</i>
Date Started: <i>YYYYMMDD</i>	Time Started: <i>HH:MM</i>	Date Completed: <i>YYYYMMDD</i>	Time Completed: <i>HH:MM</i>
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>			

Hardware Identification	Production Number <i>CCCCCCCCCCCCCCCC</i>	Serial Number <i>CCCCCCCCCCCCCCCC</i>	
Casting Numbers	Block <i>CCCCCCCCCCCCCCCC</i>	Cam, Left <i>CCCCCCCCCCCCCCCC</i>	Cam, Right <i>CCCCCCCCCCCCCCCC</i>
Piston Part Number	<i>CCCCCCCCCCCCCCCC</i>	Piston Ring Casting Number <i>CCCCCCCCCCCCCCCC</i>	
Cylinder Head Casting Number	Left <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>	Right <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>	

Sludge Deposits	
Area	Merit
Rocker Arm Cover, Left	<i>SI.12</i>
Rocker Arm Cover, Right	<i>SI.12</i>
Camshaft Baffle, Left	<i>SI.12</i>
Camshaft Baffle, Right	<i>SI.12</i>
Timing Chain Cover	<i>SI.12</i>
Oil Pan Baffle	<i>SI.12</i>
Oil Pan	<i>SI.12</i>
Valve Deck Area, Left	<i>SI.12</i>
Valve Deck Area, Right	<i>SI.12</i>
Average Engine Sludge	<i>SI2.12</i>

Varnish Deposits	
Area	Merit
Piston Skirt, Thrust	<i>SI2.12</i>
Rocker Arm Cover, Left	<i>SI.12</i>
Rocker Arm Cover, Right	<i>SI.12</i>
Average Engine Varnish	<i>SI2.12</i>

Wear Measurements		
Ring Wear	Units	Value
Follower Pin Wear, cyl #8, Intake.	μm	<i>SI23.1</i>
Follower Pin Wear, cyl #8, Exhaust.	μm	<i>SI23.1</i>
Cylinder Bore Wear, cyl #1 & #8 Max.	μm	<i>SI23.1</i>
Cylinder Bore Wear, cyl #1 & #8 Avg.	μm	<i>SI23.1</i>
Ring Gap Increase, cyl #1 & #8, Max	μm	<i>SI23.1</i>
Ring Gap Increase, cyl #1 & #8, Avg	μm	<i>SI23.1</i>

Piston Varnish Deposits, Thrust Side	
Piston Number	Merit
1	<i>SI.12</i>
2	<i>SI.12</i>
3	<i>SI.12</i>
4	<i>SI.12</i>
5	<i>SI.12</i>
6	<i>SI.12</i>
7	<i>SI.12</i>
8	<i>SI.12</i>
Average	<i>SI2.12</i>

FIG A7.5 Deposit Breakdown

**SEQUENCE VG
FORM 6
OPERATIONAL SUMMARY**

Laboratory: <i>CC</i>	Date Completed: <i>YYYYMMDD</i>	Time Completed: <i>HH:MM</i>
Stand: <i>CCCC</i>	Stand Runs: <i>CCCC</i>	Total Runs on Stand: <i>CCCC</i>
Oil Code: <i>CC</i>		
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>		

Controlled Parameters	Parameter	Units	QI Threshold	EOT QI	Target			Average			Samples	BQD	Over/Under Range
					Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3			
	Speed	r/min	0.000	<i>S12.123</i>	1200	2900	700	<i>S1234</i>	<i>S1234</i>	<i>S1234</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Manifold Abs Press	kPa	0.000	<i>S12.123</i>	69	66	Record	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Engine Oil, In	°C	0.000	<i>S12.123</i>	68	100	45	<i>S123.1</i>	<i>S123.1</i>	<i>S123.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Engine Coolant, Out	°C	0.000	<i>S12.123</i>	57	85	45	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Engine Coolant Flow	L/min	0.000	<i>S12.123</i>	48	Record	Record	<i>S123.1</i>	<i>S123.1</i>	<i>S123.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Engine Coolant Pressure	kPa	0.000	<i>S12.123</i>	70	70	70	<i>S123.1</i>	<i>S123.1</i>	<i>S123.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	RAC Coolant, In	°C	0.000	<i>S12.123</i>	29	85	29	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	RAC Flow	L/min	0.000	<i>S12.123</i>	15	15	15	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Intake Air	°C	0.000	<i>S12.123</i>	30	30	30	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Intake Air Pressure	kPa	0.000	<i>S12.123</i>	0.05	0.05	0.05	<i>S1.123</i>	<i>S1.123</i>	<i>S1.123</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Intake Air Humidity	g/kg	0.000	<i>S12.123</i>	11.4	11.4	11.4	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
	Exhaust Backpressure	kPa	0.000	<i>S12.123</i>	104	107	Record	<i>S123.1</i>	<i>S123.1</i>	<i>S123.1</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>
Non-controlled Parameters	Parameter	Units		Specifications									
	Fuel Flow	kg/h		Record	Record	Record	<i>S12.1</i>	<i>S12.1</i>	<i>S12.1</i>				
	Blowby	L/min		Record	60-70			<i>S12.12</i>					
	Power	kW		Record	Record	1.3 ± 0.2	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>				
	Exhaust Gas												
	Left Manifold O ₂	% Vol		1.0 Max	1.0 Max	3.0 Max	<i>S1.12</i>	<i>S1.12</i>	<i>S1.12</i>				
	Right Manifold O ₂	% Vol		1.0 Max	1.0 Max	3.0 Max	<i>S1.12</i>	<i>S1.12</i>	<i>S1.12</i>				
	Left Manifold CO	% Vol		1.0 Max	2.0 Max	8.5±1.5	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>				
	Right Manifold CO	% Vol		1.0 Max	2.0 Max	8.5±1.5	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>				
	Left Manifold CO ₂	% Vol		13.5-15.5	13.5-15.5	Record	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>				
Right Manifold CO ₂	% Vol		13.5-15.5	13.5-15.5	Record	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>					
Lambda	AFR		1.0	1.0	0.75	<i>S1.12</i>	<i>S1.12</i>	<i>S1.12</i>					

FIG A7.6 Operational Summary

**SEQUENCE VG
FORM 7
OIL ADDITION RECORD & BLOWBY RATES
NON-REFERENCE & REFERENCE OIL TESTS**

Laboratory: <i>CC</i>	Stand: <i>CCCCC</i>	Stand Runs: <i>CCCC</i>	Oil Code: <i>cc</i>
Date Started: <i>YYYYMMDD</i>	Time Started: <i>HH:MM</i>	Date Completed: <i>YYYYMMDD</i>	Time Completed: <i>HH:MM</i>
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC</i>			

Cycle	Test Hour	Oil Added, g	Oil Consumed, g
6	23 h, 25 min	<i>S1234</i>	<i>S1234</i>
12	47 h, 25 min	<i>S1234</i>	<i>S1234</i>
18	71 h, 25 min	<i>S1234</i>	<i>S1234</i>
24	95 h, 25 min	<i>S1234</i>	<i>S1234</i>
30	119 h, 25 min	<i>S1234</i>	<i>S1234</i>
36	143 h, 25 min	<i>S1234</i>	<i>S1234</i>
42	167 h, 25 min	<i>S1234</i>	<i>S1234</i>
48	191 h, 25 min	<i>S1234</i>	<i>S1234</i>
54	215 h, 25 min		<i>S1234</i>
Total, g		<i>S123456</i>	<i>S123456</i>

Stage II	
Test Hours	Blowby, L/min
Break-in	<i>S12.12</i>
23	<i>S12.12</i>
47	<i>S12.12</i>
71	<i>S12.12</i>
95	<i>S12.12</i>
119	<i>S12.12</i>
143	<i>S12.12</i>
167	<i>S12.12</i>
191	<i>S12.12</i>
215	<i>S12.12</i>
Maximum	<i>S12.12</i>
Minimum	<i>S12.12</i>
Average Blowby, Hours 23 - 119	<i>S12.12</i>
Average	<i>S12.12</i>

FIG A7.7 Blowby and Oil Additions

**SEQUENCE VG
FORM 8
ANALYSIS OF OIL**

Laboratory: <i>CC</i>	Stand: <i>CCCC</i>	Stand Runs: <i>CCCC</i>	Oil Code: <i>cc</i>
Date Started: <i>YYYYMMDD</i>	Time Started: <i>HH:MM</i>	Date Completed: <i>YYYYMMDD</i>	Time Completed: <i>HH:MM</i>
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>			

Test Hours	Ag, ppm	Al, ppm	Cr, ppm	Cu, ppm	Fe, ppm	Pb, ppm	Si, ppm	Sn, ppm	Fuel Dilution by GC, Wt. % D3525	Pentane Insolubles, Wt. % D893B ^A	TBN D4739 ^A	Vis. @ 40°C, cSt D445	Vis. @ 100°C, cSt D445 ^A
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>			<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>

^A Analyses not required by Test Method

